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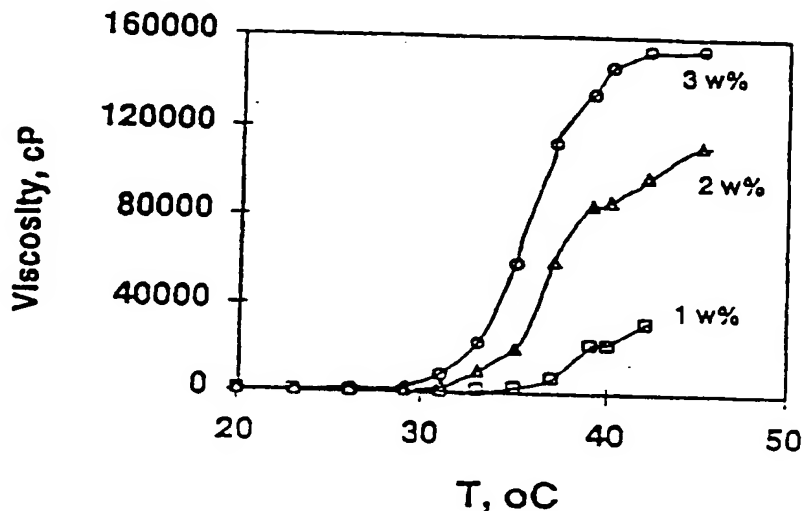
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(54) Title: COMPOSITIONS FOR COSMETIC APPLICATIONS

(57) Abstract

A cosmetic composition is described having a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.



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COMPOSITIONS FOR COSMETIC APPLICATIONS

This application is a continuation-in-part application of copending application
5 U.S.S.N. 60/034,805 filed January 2, 1997, and entitled "Responsive Polymer
Networks and Methods of Their Use", which is a continuation-in-part application of
copending application PCT/US96/10376 filed June 14, 1996, designating the United
States, and entitled "Responsive Polymer Networks and Methods of Their Use", which
10 is a continuation-in-part application of copending application U.S.S.N. 08/580,986 filed
January 3, 1996, and entitled "Responsive Polymer Networks and Methods of Their
Use", each of which is incorporated entirely by reference.

Field of the Invention

The present invention relates to a cosmetic composition useful in a variety of
15 topical and personal care products, including treatments of disorders and imperfections
of the skin or other areas of the body. More particularly, the present invention is
directed to a cosmetic composition comprising a poloxamer:poly(acrylic acid)
polymer network that can be designed to reversibly gel over a wide range of
conditions to provide a composition having a controllable range of viscosities, making
20 it useful in a variety of cosmetic and personal care applications.

Background of the Invention

Many examples are known of cosmetic compositions intended for treatment of
the skin or elsewhere on the body, where it is desired to have certain properties of
25 viscosity. Hydrogels, such as cellulose, have been included as thickeners in cosmetic
compositions. A hydrogel is a polymer network which absorbs a large quantity of
water without the polymer dissolving in water. The hydrophilic areas of the polymer
chain absorb water and form a gel region. The extent of gelation depends upon the
volume of the solution which the gel region occupies.

30 Reversibly gelling solutions are known in which the solution viscosity increases

and decreases with an increase and decrease in temperature, respectively. Such reversibly gelling systems are useful wherever it is desirable to handle a material in a fluid state, but performance is preferably in a gelled or more viscous state.

A known material with these properties is a thermal setting gel using block copolymer polyols, available commercially as Pluronic® polyols (BASF, Ludwigshafen, Germany), which is described in U.S. Patent No. 4,188,373. Adjusting the concentration of the polymer gives the desired liquid-gel transition. However, concentrations of the polyol polymer of at least 18-20 % by weight are needed to produce a composition which exhibits such a transition at commercially or physiologically useful temperatures. Also, solutions containing 18-20 % by weight of responsive polymer are typically very viscous even in the "liquid" phase, so that these solutions can not function under conditions where low viscosity, free-flowing is required prior to transition. In addition, these polymer concentrations are so high that the material itself may cause unfavorable interactions during use.

Another known system which is liquid at room temperature, but forms a semi-solid when warmed to about body temperature is formed from tetrafunctional block polymers of polyoxyethylene and polyoxypropylene condensed with ethylenediamine, commercially available as Tetronic® polyols. These compositions are formed from approximately 10% to 50% by weight of the polyol in an aqueous medium. See, U.S. Patent No. 5,252,318.

Joshi *et al.* in U.S. Patent No. 5,252,318 reports reversible gelling compositions which are made up of a physical blend of a pH-sensitive gelling polymer (such as a cross-linked poly(acrylic acid) and a temperature-sensitive gelling polymer (such as methyl cellulose or block copolymers of poly(ethylene glycol) and poly(propylene glycol)). In compositions including methylcellulose, 5- to 8-fold increases in viscosity are observed upon a simultaneous change in temperature and pH for very low methylcellulose levels (1-4% by weight). See, Figs. 1 and 2 of Joshi *et al.* In compositions including Pluronic® and Tetronic® polyols, commercially available forms of poly(ethylene glycol)/poly(propylene glycol) block copolymers, significant increases in viscosity (5- to 8-fold) upon a simultaneous change in temperature and pH

are observed only at much higher polymer levels. See, Figs. 3-6 of Joshi *et al.*

Hoffman *et al.* in WO 95/24430 disclose block and graft copolymers comprising a pH-sensitive polymer component and a temperature-sensitive polymer component. The block and graft copolymers are well-ordered and contain regularly repeating units of the pH-sensitive and temperature-sensitive polymer components. The copolymers are described as having a lower critical solution temperature (LCST), at which both solution-to-gel transition and precipitation phase transition occur. Thus, the transition to a gel is accompanied by the clouding and opacification of the solution. Light transmission is reduced, which may be undesirable in many applications, where the aesthetic characteristics of the composition are of some concern.

Thus, the known systems which exhibit reversible gelation are limited in that they require large solids content and/or in that the increase in viscosity less than 10-fold. In addition, some known systems exhibit an increase in viscosity which is accompanied with the undesirable opacification of the composite.

Summary of the Invention

It is an object of the present invention to provide a cosmetic composition which includes a component capable of reversible gelation or viscosification.

It is a further object of the invention to provide a cosmetic composition which includes an ingredient capable of gelation or viscosification at very low solids content.

It is another object of the present invention to provide a cosmetic composition which possesses improved flow and gelation characteristics as compared to properties possessed by conventional reversible gelation compositions.

It is a further object of the invention to provide a polymer network composition for use in cosmetic compositions useful as a surfactant or emulsifier in the solubilization of additives and, in particular, hydrophobic additives.

It is a further object of the invention to provide a cosmetic composition which possesses the appropriate thickness, emolliency and cosmetic effect with a minimum of solids content.

It is a further object of the invention to provide a polymer network for use in

cosmetic compositions useful as a suspending agent for otherwise insoluble additives.

It is yet a further object of the present invention to provide a composition capable of solubilizing emulsions at elevated temperatures.

It is yet a further object of the invention to provide new and useful cosmetic
5 compositions incorporating the reversibly gelling polymer network composition of the present invention, which take advantage of its unique advantageous properties.

It is yet another object of the present invention to provide reversibly gelling polymer network compositions which are composed of biocompatible polymers.

These and other objects of the invention are achieved with a cosmetic
10 composition which incorporates a poloxamer:poly(acrylic acid) polymer network as a cosmetically acceptable carrier. The polymer network comprises a poloxamer component randomly bonded to a poly(acrylic acid), or PAA, component in an aqueous-based medium, the polymer network being capable of aggregating in response to an increase in temperature. The reverse thermal viscosifying
15 poloxamer:poly(acrylic acid) polymer network includes random covalent bonding between the poly(acrylic acid) component and the poloxamer component of the network. The polymer network may also include some unbound or "free" poloxamer or other additives which contribute to or modify the characteristic properties of the polymer composition.

20 In addition, the cosmetic composition includes a cosmetic agent selected to provide a preselected cosmetic effect. By "cosmetic agent", as that term is used herein, it is meant that the additive imparts a cosmetic effect. A cosmetic effect is distinguishable from a pharmaceutical effect in that a cosmetic effect relates to the promoting bodily attractiveness or masking the physical manifestations of a disorder or
25 disease. In contrast, a pharmaceutical seeks to treat the source or symptom of a disease or physical disorder. It is noted however, that the same additives may have either a cosmetic or pharmaceutical effect, depending upon the amounts used and the manner of administration.

By "cosmetic" as that term is used herein, it is meant the cosmetic and

personal-care applications intended to promote bodily attractiveness or to cover or mask the physical manifestations of a disorder or disease. Cosmetics include those products subject to regulation under the FDA cosmetic guidelines, as well as sunscreen products, acne products, skin protectant products, anti-dandruff products, and deodorant and antiperspirant products.

By "gelation" or viscosification, as that term is used herein, it is meant a drastic increase in the viscosity of the polymer network solution. Gelation is dependent on the initial viscosity of the solution, but typically a viscosity increase in the range of preferably 2- to 100-fold, and preferably 5- to 50-fold, and more preferably 10- to 20-fold is observed in the polymer network which is used in the preparation of the cosmetic compositions of the invention. Such effects are observed in a simple polymer network solution and the effect may be modified by the presence of other components in the cosmetic composition.

By "reversibly gelling" as that term is used herein, it is meant that the process of gelation takes place upon an *increase* in temperature rather than a decrease in temperature. This is counter-intuitive, since it is generally known that solution viscosity *decreases* with an increase in temperature.

As used herein, "poloxamer" is a triblock copolymer derived from poly(ethylene glycol)-poly(propylene glycol)-poly(ethylene glycol) blocks. The poloxamer is capable of responding to a change in temperature by altering its degree of association and/or agglomeration. The aggregation may be in the form of micelle formation, precipitation, labile crosslinking or other factors. The poloxamer has the general formula of a triad ABA block copolymer, $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethylene glycol) and P_2 = poly(propylene glycol) blocks, where a is in the range of 10-50 and where b is in the range of 50-70.

The poly(acrylic acid) component includes poly(acrylic acid) and its salts. The poly(acrylic acid) supports and interacts with the poloxamer component so that a multi-material, responsive polymer network is formed. The interaction of the poloxamer and poly(acrylic acid) exhibits a synergistic effect, which magnifies the effect of the poloxamer component in viscosifying and/or gelling the solution.

The novel interaction between the constituent polymers components of the polymer network permits formation of gels at very low solids content. Gelation and/or viscosification is observed in aqueous solutions having about 0.01 to 20 wt% of the poloxamer component and about 0.01 to 20 wt% of the poly(acrylic acid) component.

5 A typical reversibly gelling polymer network may be comprised of less than about 4 wt% of total polymer solids (e.g., poloxamer and poly(acrylic acid)) and even less than 1 wt% total polymer solids while still exhibiting reverse thermal viscosification. Of course, the total solids content including additives of a reversibly gelling polymer network composition may be much higher. The viscosity of the gel increases at least

10 ten-fold with an increase in temperature of about 5°C at pH 7 and 1 wt% polymer. Viscosity increases may be even greater over a larger temperature range at pH 7 and 1% polymer network content.

The relative proportion of poloxamer and poly(acrylic acid) may vary dependent upon the desired properties of the polymer composition. In one

15 embodiment, the poloxamer is present in a range of about 1 to 20 wt% and the poly(acrylic acid) is present in a range about of 99 to 80 wt%. In another embodiment, the poloxamer component is present in a range of about 21 to 40 wt% and the poly(acrylic acid) component is present in a range of about 79 to 60 wt%. In another embodiment, the poloxamer component is present in a range of about 41 to 50

20 wt% and the poly(acrylic acid) component is present in a range of about 59 to 50 wt%. In another embodiment, the poloxamer component is present in a range of about 51 to 60 wt% and the poly(acrylic acid) component is present in a range of about 49 to 40 wt%. In yet another embodiment, the poloxamer component is present in a range of about 61 to 90 wt% and the poly(acrylic acid) component is present in a

25 range of about 39 to 20 wt%. In another embodiment, the poloxamer component is present in a range of about 81 to 99 wt% and the poly(acrylic acid) component is present in a range of about 19 to 1 wt%.

The poloxamer:poly(acrylic acid) polymer network described above is included in a cosmetic composition to improve the flow characteristics, thickness and other

30 properties of the composition. The composition includes additional cosmetic agents.

such as are needed for the cosmetic purpose of the composition. Additives also may be included to modify the polymer network performance, such as to increase or decrease the temperature of the liquid-to-gel transition and/or to increase or decrease the viscosity of the responsive polymer composition.

5 In one aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic compositions to impart thickening properties to the cosmetic composition at the use and/or application temperature. Such thickening properties include enhanced overall viscosity, as well as a desirable viscosity response with temperature. The polymer network may be useful as a thickener in pH ranges
10 where other thickeners are not effective.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to stabilize and solubilize hydrophobic agents in the cosmetic composition. The polymer network may be included to increase emulsion stability. Many emulsions, i.e., suspension of small
15 droplets or particles of a first material in a second material, lose viscosity upon heating. As will be demonstrated herein, the poloxamer:poly(acrylic acid) polymer network retains its emulsifying properties even with temperature increase.

In addition, it may be included in the composition to impart emolliency to the composition. The composition may also act as a film-forming agent after it has been
20 applied to the skin. This film-forming agent may be used as a barrier to prevent water loss from the skin which contributes to the moisturization of the skin.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network may be included as an additive in cosmetic applications to prevent viscosity loss at elevated temperatures.

25

Brief Description of the Drawing

The invention is described with reference to the Drawing, which is presented for the purpose of illustration and is in no way intended to be limiting, and in which:

Figure 1 is a graph of viscosity vs. temperature for a 1 wt%, 2 wt% and 3 wt%
30 responsive polymer network aqueous composition of a poloxamer/poly(acrylic acid)

(1:1) at pH 7.0 measured at a shear rate of 0.44 sec^{-1} ;

Figure 2 is a graph of viscosity vs. temperature for a 1 wt% poloxamer: poly(acrylic acid) polymer network composition demonstrating reversibility of the viscosity response;

5 Figure 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates;

Figure 4 shows a viscosity response curve for a 2 wt% poloxamer: poly(acrylic acid) polymer network composition prepared with nominal mixing and stirring and prepared using high shear homogenization (8000 rpm, 30 min);

10 Figure 5 is a graph of viscosity vs. temperature for a 1 wt% poloxamer: poly(acrylic acid) polymer network composition at various pHs;

Figure 6 is a graph of viscosity vs. temperature for a 1 wt% poloxamer: poly(acrylic acid) polymer network composition with and without addition of 0.25 wt% KCl;

15 Figure 7 is a graph of viscosity vs. temperature for a 1 wt% poloxamer: poly(acrylic acid) polymer network composition with and without addition of 0.5 wt% acetamide MEA;

Figure 8 is a graph of viscosity vs. temperature for a 1 wt% poloxamer: poly(acrylic acid) polymer network composition without and with 5 wt%, 10 wt% and 20 wt% added ethanol, respectively;

20 Figure 9 is an illustration of a reversibly gelling polymer network used as an emulsifier and stabilizer for a hydrophobic agent;

Figure 10 is a schematic illustration of the poloxamer:poly(acrylic acid) polymer network below and above the transition temperature illustrating the aggregation of the hydrophobic poloxamer regions;

25 Figure 11 is a graph of viscosity vs. pH for a 1 wt% responsive polymer network aqueous composition of a poloxamer/poly(acrylic acid) (1:1) measured at a shear rate of 0.44 sec^{-1} ;

30 Figure 12 is a plot of viscosity vs. temperature for (a) a 1 wt% responsive polymer network aqueous composition of Pluronic® F127 poloxamer/poly(acrylic acid)

(1:1) and (b) a 1 wt% physical blend of Pluronic® F127 poloxamer/poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate 0.22 sec^{-1} ;

Figure 13 is a plot of viscosity vs. temperature for a 1 wt% responsive polymer network aqueous composition of Pluronic® F88 poloxamer/poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate 2.64 sec^{-1} ;

Figure 14 is a graph of the viscosity vs. temperature effect for a responsive polymer network composition of 2 wt% Pluronic® P104 poloxamer/poly(acrylic acid) (1:1) in deionized water at pH 7.0 measured at shear rate of 22 sec^{-1} ;

Figure 15 is plot of viscosity vs. temperature for a responsive polymer network composition of 2 wt% Pluronic® F123 poloxamer/poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 22 sec^{-1} ;

Figure 16 is a plot of viscosity vs. temperature for 1 wt% made of series of poloxamers and poly(acrylic acid) (1:1) in deionized water at a shear rate of 132 sec^{-1} ;

Figure 17 is a plot showing release of hemoglobin from a poloxamer/poly(acrylic acid) polymer network of the invention;

Figure 18 is a plot showing the release of lysozyme from the poloxamer/poly(acrylic acid) polymer complex of the invention;

Figure 19 is a plot showing release of insulin from a poloxamer/poly(acrylic acid) polymer network composition of the invention;

Figure 20 is a plot of viscosity vs. temperature for a poloxamer/poly(acrylic acid) polymer network composition (a) before and (b) after sterilization by autoclave;

Figure 21 is a plot of viscosity vs. temperature for an oil-free moisturizing formulation prepared from (a) a responsive polymer network composition of the invention and (b) a conventional oil-in-water formulation;

Figure 22 is a plot of equilibrium solubility of estradiol (A, B) and progesterone (C, D) in aqueous solutions (pH 7) of Pluronic® F127 (A, C) and responsive polymer network (B, D) vs. temperature;

Figure 23 is a plot of the ratio of equilibrium solubilities of estradiol in responsive polymer network and water vs. polymer concentration in the responsive polymer network solutions;

Figure 24 is a plot of the effect of loading fluorescein on the onset of gelation of responsive polymer network vs. total polymer concentration in responsive polymer network solution (pH 7.0);

Figure 25 is a plot of the percentage of a) estradiol and b) progesterone release from responsive polymer network vs. time;

Figure 26 is a plot of the rate of progesterone release and macroscopic viscosity vs. polymer concentration;

Figure 27 is a plot of the percentage of progesterone release vs. polymer concentration in responsive polymer network and,

Figure 28 is a plot of the relative diffusivity of poly(styrene) latex particles in water and responsive polymer network.

Detailed Description of the Invention

The present invention is directed to a cosmetic composition comprising a cosmetically acceptable carrier comprising a novel poloxamer:poly(acrylic acid) polymer network. The polymer network functions as a temperature sensitive thickening agent, and in addition possesses surfactant and emulsifying capabilities which may be beneficial to the cosmetic composition. The polymer network composition according to the invention includes a poloxamer component randomly bonded to a poly(acrylic acid) component. The two polymer components may interact with one another on a molecular level. The polymer network contains about 0.01-20 wt% each of poloxamer and poly(acrylic acid). Exemplary polymer network compositions range from about 1:10 to about 10:1 poloxamer:poly(acrylic acid). Polymer network gel compositions which exhibit a reversible gelation at body temperature (25-40°C) and/or at physiological pH (ca. pH 3.0-9.0) and even in basic environments up to pH 13 (hair care) are particularly preferred for cosmetic applications.

In one embodiment of the invention, a 1:1 poloxamer:poly(acrylic acid) polymer network at appropriate pH exhibits flow properties of a liquid at about room temperature, yet rapidly thickens into a gel consistency of at least about five times

greater, preferably at least about 10 times greater, and even more preferably at least about 30 times and up to 100 times greater, viscosity upon increase in temperature of about 10 °C and preferably about 5 °C. The reversibly gelling polymer network of the present invention exhibit gelation even at very low polymer concentrations. For
5 example, polymer network compositions at pH 7 comprising about 0.5 wt% poloxamer component and about 0.5 wt% PAA exhibits a significant increase in viscosity from a free-flowing liquid (50 cps) to a gel (6000 cps). The observed gelation takes place at low solids contents, such as less than 20 wt% or preferably less than about 10 wt%, or more preferably less than about 2.5 wt% or most preferably less than about 0.1 wt%.
10 Thus, only a small amount by weight of the polymer network need be incorporated into a cosmetic composition in order to provide the desired thickening or viscosifying effect.

The reverse viscosification effect at low polymer concentrations provides clear, colorless gels which are particularly well-suited to cosmetic applications. For example,
15 very little residue is formed upon dehydration which may be important in some applications, such as in topically applied cosmetics. An additional advantage of the polymer network of the invention is that it remains clear and translucent above and below the critical temperature or pH. These characteristics of the reversibly gelling polymer network make it well suited for use in cosmetic compositions.

20 The polymer network of the present invention technology may be added to cosmetic formulations to increase the thickness and viscosity of the composition. The poloxamer:poly(acrylic acid) polymer network possesses hydrophobic regions capable of aggregation. Unlike conventional thickeners, the aggregation of the polymer network of the present invention is temperature sensitive. Thus, the inventive polymer
25 network of the present invention may have a transition temperature (i.e. temperature of aggregation) above room temperature so that the cosmetic composition is of low viscosity at or below room temperature and is of high viscosity at or around body temperature (body temperature includes both surface and internal body temperature). Thus, a composition may be prepared at low temperatures while the polymer network
30 is in a low viscosity state. Mixing of ingredients under low viscosity is expected to be

easier, thus simplifying the manufacturing process. Yet, the resultant mixture would be of increased viscosity at use temperatures. As a further advantage, a cosmetic composition comprising poloxamer:poly(acrylic acid) polymer network may be spread thinly to allow for even application, due to its low viscosity at room temperature, but
5 will thicken and "fill" the skin contours upon warming up to body surface temperature.

In another aspect of the invention, the composition may be applied through a nozzle that provides high shear to reduce viscosity, yet the composition regains its viscosity after application to the skin. This contrasts with conventional formulations which permanently lose viscosity after being subjected to high shear.

10 In another aspect of the invention, the composition may be formulated and applied as a liquid, spray, semi-solid gel, cream, ointment, lotion, stick, roll-on formulation, mousse, pad-applied formulation, and film-forming formulation.

The poloxamer:poly(acrylic acid) polymer network may also be included in a cosmetic composition for use as a stabilizing, solubilizing or emulsifying agent for a
15 hydrophobic component of the cosmetic formulation. The strong hydrophilic regions of the poloxamer resulting from aggregation and micelle formation create hydrophobic domains which may be used to solubilize and control release of hydrophobic agents. Similar micelle-based systems have been shown to protect trapped peptides against enzymatic degradation from surface enzymes.

20 The reversibly gelling polymer network of the present invention is a unique polymer composition designed to abruptly change its physical characteristics or the characteristics and properties of materials mixed therewith with a change in temperature. Without intending to be bound by any particular mechanism or chemical structure, it is believed that the structure of the polymer network involves a random
25 bonding of the poloxamer onto the backbone of the poly(acrylic acid). A portion of the poloxamer which is present during the polymerization reaction which forms the poly(acrylic acid) is bonded to the backbone of the forming poly(acrylic acid) through hydrogen abstraction and subsequent reaction. See detailed discussion of the mechanism, below. The combination of the poly(acrylic acid) and randomly bonded
30 poloxamer gives the composition its unique properties. Any free poloxamer remaining

after polymerization of PAA remains associated with the random co-polymer, resulting in a miscible composition. Free poloxamer may also be present in the polymer network composition; however, its presence is not required in order to observe reverse thermal viscosification.

5 The poly(acrylic acid) may be linear, branched and/or crosslinked. Poly(acrylic acid) is capable of ionization with a change in pH of the solution. By ionization, as that term is used with respect to poly(acrylic acid), it is meant the formation of the conjugate base of the acrylic acid, namely acrylate. As used herein, poly(acrylic acid) includes both ionized and non-ionized versions of the polymer. Changes in ionic
10 strength may be accomplished by a change in pH or by a change in salt concentration. The viscosifying effect of the polymer network is partly a function of the ionization of the poly(acrylic acid); however, reverse thermal gelling may occur without ionization. Changes to the ionic state of the polymer causes the polymer to experience attractive (collapsing) or repulsive (expanding) forces. Where there is no need or desire for the
15 composition to be applied in a high viscosity state, it may be possible to prepare the composition as non-ionized poly(acrylic acid). The body's natural buffering ability will adjust the pH of the applied composition to ionize the poly(acrylic acid) and thereby develop its characteristic viscosity.

 The poloxamer possesses regions of hydrophobic character, e.g., poly(propylene glycol) blocks, and hydrophilic character, e.g., poly(ethylene glycol) blocks. The
20 poloxamer may be linear or branched. Suitable poloxamers include triad block copolymers of poly(ethylene glycol) and poly(propylene glycol) having the general formula $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethylene glycol) and P_2 = poly(propylene glycol) blocks, where a is in the range of 10-50 and where b is in the range of 50-70.
25 where poly(propylene glycol) represents the hydrophobic portion of the polymer and poly(ethylene glycol) represents the hydrophilic portion of the polymer. Pluronic® polymers (BASF) are commercially available for a in the range of 16 to 48 and b ranging from 54-62. One or more poloxamers may be used in the reversibly gelling polymer network composition of the present invention.

30 The reversibly gelling responsive polymer networks compositions of the present

invention are highly stable and do not exhibit any phase separation upon standing or upon repeated cycling between a liquid and a gel state. Samples have stood at room temperature for more than three months without any noticeable decomposition, clouding, phase separation or degradation of gelation properties. This is in direct contrast to polymer blends and aqueous mixed polymer solutions, where phase stability and phase separation is a problem, particularly where the constituent polymers are immiscible in one another.

An example of the dramatic increase in viscosity and of the gelation of the reversibly gelling polymer network compositions of the invention is shown in Figure 1. Figure 1 is a graph of viscosity vs. temperature for 1 wt%, 2 wt% and 3 wt% polymer network compositions comprising 1:1 poloxamer:poly(acrylic acid), hydrated and neutralized. The viscosity measurements were taken on a Brookfield viscometer at a shear rate of 0.44 sec^{-1} at pH 7.0. All solutions had an initial viscosity of about 1080 cP and exhibited a dramatic increase in viscosity to gel point at about 35°C . This is not typical of all polymer network compositions since polymerization condition will affect initial viscosity. Final viscosities were approximately 33,000 cP, 100,000 cP and 155,000 cP for the 1 wt%, 2 wt% and 3 wt% compositions, respectively. This represents viscosity increases of about 30-, 90- and 140-fold, respectively. This effect is entirely reversible. Upon cooling, the composition regains its initial viscosity. This is demonstrated in Figure 2, where a 1 wt% poloxamer:poly(acrylic acid) composition is warmed through the transition temperature up to 35°C (simple curve), cooled to room temperature (24°C , ticked curve) and then warmed again to up above the transition temperature (open box curve). The viscosity response was virtually identical in all three instances.

As would be expected with a non-Newtonian system, the solution viscosity differs with different shear rates. Figure 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates. The viscosity response is consistent between 24°C and 34°C ; however, the final viscosity is reduced with increasing shear rate.

However, unlike many prior art hydrogels, e.g., carbomers, the

poloxamer:poly(acrylic acid) polymer network composition does not permanently lose viscosity after being subjected to high shear conditions. The poloxamer:poly(acrylic acid) polymer network composition remains unaffected by such shear conditions as homogenization. Figure 4 compares the viscosity response curve of a 2 wt% poloxamer:poly(acrylic acid) polymer composition prepared with nominal mixing (simple lime) and stirring with that of a polymer composition of similar composition prepared using high shear homogenization designated by a ticked line (8000 rpm, 30 min). No significant decrease in viscosity is observed.

A number of factors influence the viscosity and transition temperature of the composition. The more important factors include polymer concentration, pH and presence and nature of additives.

The effect of pH on the viscosity of reversibly gelling polymer networks is shown in Figure 5. Increasing pH from the starting pH has a lesser effect on the viscosity than decreasing the pH. This may relate to the extent of ionization of the poly(acrylic acid) component of the polymer network as discussed above. This may be clearly seen in Figure 5 when comparing the viscosity response of a 1 wt% poloxamer:poly(acrylic acid) polymer composition at pH 5 and pH 11. Satisfactory viscosities can be obtained at high pHs indicating the potential value of the reversibly gelling polymer network in products such as depilatories, hair straighteners and hair relaxers.

The responsive polymer network may also include additives for influencing the performance of the polymer composition, such as the transition temperature and the viscosity of the polymer composition above the transition temperature. The following list is not intended to be exhaustive but rather illustrative of the broad variety of additives which can be used.

These materials include solvents (e.g., 2-propanol, ethanol, acetone, 1,2-pyrrolidinone, N-methylpyrrolidinone), salts (e.g., calcium chloride, sodium chloride, potassium chloride, sodium or potassium phosphates, borate buffers, sodium citrate), preservatives (benzalkonium chloride, phenoxyethanol, sodium hydroxymethylglycinate, ethylparaben, benzoyl alcohol, methylparaben, propylparaben,

butylparaben, Germaben II), humectant/moisturizers (acetamide MEA, lactimide MEA, hydrolyzed collagen, mannitol, panthenol, glycerin), lubricants (hyaluronic acid, mineral oil, PEG-60-lanolin, PPG-12-PEG-50-lanolin, PPG-2 myristyl ether propionate) and surfactants.

5 Surfactants may be divided into three classes: cationic, anionic, and nonionics. An example of a cationic surfactant used is ricinoleamidopropyl ethyldimonium ethosulfate (Lipoquat R). Anionic surfactants include sodium dodecyl sulfate and ether sulfates such as Rhodapex CO-436. Nonionic surfactants include Surfynol CT-111, TG, polyoxyethylene sorbitan fatty acid esters such as Tween 65 and 80, sorbitan fatty
10 acid esters such as Span 65, alkylphenol ethoxylates such as Igepal CO-210 and 430, dimethicone copolyols such as Dow Corning 190, 193, and Silwet L7001.

The addition of polymers has been studied including xanthan gum, celluloses such as hydroxyethylcellulose (HEC), carbomethoxycellulose (CMC), lauryldimonium hydroxypropyl oxyethyl cellulose (Crodacel QL), hydroxypropylcellulose (HPC), and
15 hydroxypropylmethylcellulose (HPMC), poly(acrylic acid), cyclodextrins, methyl acrylamido propyl triammonium chloride (MAPTAC), polyethylene oxide, polyvinylpyrrolidone, polyvinyl alcohol, and propylene oxide/ethylene oxide random copolymers. Poloxamers may also be used as additives. Examples include both the Pluronic® polyols having an $(P_1)_a(P_2)_b(P_1)_a$ structure such as Pluronic® F38, L44, P65,
20 F68, F88, L92, P103, P104, P105, F108, L122 and F127, as well as the reverse Pluronic® R series $(P_2)_a(P_1)_b(P_2)_a$ structure such as Pluronic® 17R2 and 25R8. Other miscellaneous materials include propylene glycol, urea, triethanolamine, alkylphenol ethoxylates (Iconol series), and linear alcohol alkoxyates (Plurafac series).

Additives affect the viscosity of the compositions differently depending upon
25 the nature of the additive and its concentration. Some additives will affect the initial or final viscosity, whereas others will affect the temperature range of the viscosity response, or both.

Potassium chloride and acetamide MEA are two examples of additives which decrease the final viscosity of the composition (see, Example 30). KCl (0.25%) added
30 to a 1 wt% reversibly gelling polymer composition reduces the viscosity by about 3000

cps. See, Figure 6. The humectant, acetamide MEA, lowers the viscosity of a 1 wt% solution by approximately 1,500 cps (see, Figure 7).

Glycerin, ethanol and dimethicone copolymer have been shown to affect the temperature range over which the viscosity response occurs. Glycerin shifts the transition temperature to a slightly lower range from an initial 24-34 °C to about 24-30 °C, but does not affect the final viscosity (see, Example 44). The effect of ethanol on the viscosity is different at different concentration levels. At 5 wt% and 10 wt% added ethanol, the transition temperature is shifted to lower ranges, e.g., 24-29 °C and 20-29 °C, respectively. At 20 wt% added ethanol, the composition not only exhibits a lowering of the transition temperature, but also a marked increase in initial and final viscosity. See, Figure 8. Dimethicone copolymer (1 wt%) also changed the transition temperature, but in this instance the transition temperature range was raised to 28-41 °C. Thus, proper selection of additives permits the formulator to adjust the transition temperature to various ranges.

Those skilled in the art will appreciate that the polymer network compositions of the present invention may be utilized for a wide variety of cosmetic and personal care applications. To prepare a cosmetic composition, an effective amount of cosmetically active agent(s) which imparts the desirable cosmetic effect is incorporated into the reversibly gelling polymer network composition of the present invention. Preferably the selected agent is water soluble, which will readily lend itself to a homogeneous dispersion through out the reversibly gelling polymer network composition; however, the polymer network has been demonstrated to significantly solubilize or suspend hydrophilic agents in order to improve formulation homogeneity (see, Example 36). It is also preferred that the agent(s) is nonreactive with the polymer network composition. For materials which are not water soluble, it is also within the scope of the invention to disperse or suspend powders or oil (lipophilic materials) throughout the polymer network composition. It will also be appreciated that some applications may require a sterile environment. It is contemplated as within the scope of the invention that the reversibly gelling polymer network compositions of the present invention may be prepared under sterile conditions. An additional feature

of the reversibly gelling polymer composition is that is prepared from constituent polymers that have known accepted toxicological profiles.

The poloxamer:poly(acrylic acid) polymer network has been evaluated under Good Laboratory Practice (GLP) standard protocols known in the art for toxicity in animal models and found to exhibit no toxic effects. The results of the toxicity study are summarized in the following Table 1. The non-toxicity of the polymer network makes it an ideal candidate for use in cosmetic compositions.

Table 1. Toxicity data for 6% poloxamer:poly(acrylic acid) solution at pH 7.

Reaction testes	mode of testing	results
Skin sensitization	guinea pig - topical	not a sensitizer
eye irritation	rabbit eye instillation	negative
primary dermal irritation	rabbit - topical	very slight edema (1 on a scale of 1-8)
acute dermal toxicity	rat - single dose (2g/kg)	no toxicity
acute oral toxicity	rat - single dose (5g/kg)	no toxicity
AMES test		negative

Exemplary cosmetic and personal care applications, for which the reversibly gelling polymer network composition may be used include, but are not limited to, baby products, such as baby shampoos, lotions, powders and creams; bath preparations, such as bath oils, tablet and salts, bubble baths, bath fragrances and bath capsules; eye makeup preparations, such as eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover and mascara; fragrance preparations, such as colognes and toilet waters, powders and sachets; noncoloring hair preparations, such as hair conditioner, hair spray, hair straighteners, permanent waves, rinses shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations such as hair dye, hair tints, hair shampoos, hair color sprays, hair lighteners and hair bleaches; makeup preparations such as face powders, foundations, leg and body paints, lipstick, makeup bases, rouges and makeup fixatives; manicuring preparations such as basecoats and

undercoats, cuticle softeners, nail creams and lotions, nail extenders, nail polish and enamel, and nail polish and enamel remover; oral hygiene products such as dentrifices and mouthwashes; personal cleanliness, such as bath soaps and detergents, deodorants, douches and feminine hygiene product; shaving preparations such as aftershave lotion, beard softeners, men's talcum, shaving cream, shaving soap and preshave lotions; skin
5 care preparations such as cleansing preparations, skin antiseptics, depilatories, face and neck cleansers, body and hand cleansers, foot powders and sprays, moisturizers, night preparations, paste masks, and skin fresheners; and suntan preparations such as suntan creams, gels and lotions, indoor tanning preparations.

10 Preparation of the above-named cosmetic compositions and others may be accomplished with reference to any of the cosmetic formulation guidebooks and industry journals which are available in the cosmetic industry. These references supply standard formulations which may be modified by the addition or substitution of the reversible viscosifying polymer network of the present invention into the formulation.
15 Suitable guidebooks include Cosmetics and Toiletries Magazine, Vol. 111 (March, 1996); Formularv: Ideas for Personal Care; Croda, Inc. Parsippany, NJ (1993); and Cosmeticon: Cosmetic Formulary, BASF, which are hereby incorporated in their entirety by reference.

The cosmetic composition may be in any form. Suitable forms include but are
20 not limited to lotions, creams, sticks, roll-ons formulations, mousses, aerosol sprays, pad-applied formulations, and film-forming formulations.

As those skilled in the art will appreciate, the foregoing list is exemplary only. Because the reversibly gelling polymer network composition of the present invention is suited for application under a variety of physiological conditions, a wide variety of
25 cosmetically active agents may be incorporated into and administered from the polymer network composition. In addition to the poloxamer:poly(acrylic acid) polymer network, additional cosmetically acceptable carriers may be included in the composition, such as by way of example only, emollients, surfactants, humectants, powders and other solvents. By way of example only, the cosmetic composition also
30 may include additional components, which serve to provide additional aspects of the

cosmetic affect or to improve the stability and/or administration of the cosmetic. Such additional components include, but are not limited to, preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, astringents, antiperspirants, antiseptics, antistatic agents, astringents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents, conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators, thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances. Suitable materials which serve the additive functions listed here are well known in the cosmetic industry. A listing of the additive function and materials suitable for incorporation into the cosmetic composition may be found in Appendix A, which is appended hereto at the end of the specification. Further information may be obtained by reference to The Cosmetic Bench Handbook, Cosmetics & Toiletries; C.C. Urbano, editor, Allured Publ. Corp., 1996, which is hereby incorporated in its entirety by reference.

A brief description of some preferred additives and cosmetically active agents follows. The compositions of the invention include a safe and effective amount of a cosmetically active agent. "Safe and effective", as it is used herein, means an amount high enough to significantly positively modify the condition to be treated or the cosmetic effect to be obtained, but low enough to avoid serious side effects.

Preservatives can be desirably incorporated into the cosmetic compositions of the invention to protect against the growth of potentially harmful microorganisms.

Suitable preservatives include, but are not limited to, alkyl esters of para-hydroxybenzoic acid, hydantoin derivatives, parabens, propionate salts, triclosan tricarbanilide, tea tree oil, alcohols, farnesol, farnesol acetate, hexachlorophene and quaternary ammonium salts, such as benzolconjure, and a variety of zinc and
5 aluminum salts. Cosmetic chemists are familiar with appropriate preservatives and may select that which provides the required product stability. Preservatives are preferably employed in amounts ranging from about 0.0001% to 2% by weight of the composition.

Emollients can be desirably incorporated into the cosmetic compositions of the
10 invention to provide lubricity to the formulation. Suitable emollients may be in the form of volatile and nonvolatile silicone oil, highly branched hydrocarbons and synthetic esters. Amounts of emollients may be in the range of about 0.1-30 wt%, and preferably about 1-20 wt%. By way of example only, suitable silicones include cyclic or linear polydimethylsiloxanes, polyalkylsiloxanes, polyalkylarylsiloxanes and
15 polyether siloxanes. By way of example only, suitable ester emollients include alkenyl esters of fatty acids, polyhydric alcohols, such as ethylene glycol mono and di-fatty acid esters, polyethylene glycol and the like, ether-esters, such as fatty acid esters of ethoxylated fatty alcohols, wax esters, such as beeswax, spermaceti, myristyl myristate and stearyl stearate, and sterol esters, such as cholesterol fatty acids.

20 A variety of oily emollients may be employed in the compositions of this invention. These emollients may be selected from one or more of the following classes: 1. Triglyceride esters such as vegetable and animal fats and oils. Examples include castor oil, cocoa butter, safflower oil, cottonseed oil, corn oil, olive oil, cod liver oil, almond oil, avocado oil, palm oil, sesame oil, squalene, Kikui oil and
25 soybean oil; 2. Acetoglyceride esters, such as acetylated monoglycerides; 3. Ethoxylated glycerides, such as ethoxylated glyceryl monostearate; 4. Alkyl esters of fatty acids having 10 to 20 carbon atoms, such as, methyl, isopropyl, and butyl esters of fatty acids, and including hexyl laurate, isohexyl laurate, isohexyl palmitate, isopropyl palmitate, decyl oleate, isodecyl oleate, hexadecyl stearate, decyl stearate,
30 isopropyl isostearate, diisopropyl adipate, diisohexyl adipate, dihexyldecyl adipate,

diisopropyl sebacate, lauryl lactate, myristyl lactate, and ceryl lactate; 5. alkenyl esters of fatty acids having 10 to 20 carbon atoms, such as oleyl myristate, oleyl stearate, and oleyl oleate and the like; 6. fatty acids having 10 to 20 carbon atoms, such as pelargonic, lauric, myristic, palmitic, stearic, isostearic, hydroxystearic, oleic, linoleic, ricinoleic, arachidic, behenic, and erucic acids and the like; 7. fatty alcohols having 10 to 20 carbon atoms, such as, lauryl, myristyl, cetyl, hexadecyl, stearyl, isostearyl, hydroxystearyl, oleyl, ricinoleyl, behenyl, erucyl, and 2-octyl dodecanyl alcohols are examples of satisfactory fatty alcohols and the like; 8. fatty alcohol ethers, such as ethoxylated fatty alcohols of 10 to 20 carbon atoms including the lauryl, ceryl, stearyl, isostearyl, oleyl, and cholesterol alcohols, having attached thereto from 1 to 50 ethylene oxide groups or 1 to 50 propylene oxide groups; 9. ether-esters such as fatty acid esters of ethoxylated fatty alcohols; 10. Lanolin and derivatives, such as lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin, ethoxylated lanolin alcohols, ethoxylated cholesterol, propoxylated lanolin alcohols, acetylated lanolin alcohols, lanolin alcohols linoleate, lanolin alcohols ricinoleate, acetate of lanolin alcohols ricinoleate, acetate of ethoxylated alcohols-esters, hydrogenolysis of lanolin, ethoxylated hydrogenated lanolin, ethoxylated sorbitol lanolin, and liquid and semisolid lanolin absorption bases and the like; 11. polyhydric alcohol esters, such as, ethylene glycol mono and di-fatty acid esters, diethylene glycol mono- and di-fatty acid esters, polyethylene glycol (200-6000) mono- and di-fatty acid esters, propylene glycol mono- and di-fatty acid esters, polypropylene glycol 2000 monooleate, polypropylene glycol 2000 monostearate, ethoxylated propylene glycol monostearate, glyceryl mono- and di-fatty acid esters, polyglycerol polyfatty esters, ethoxylated glyceryl monostearate, 1,2-butyleneglycol monostearate, 1,2-butyleneglycol distearate, polyoxyethylene polyol fatty acid ester, sorbitan fatty acid esters, and polyoxyethylene sorbitan fatty acid esters are satisfactory polyhydric alcohol esters; 12. wax esters such as beeswax, spermaceti, myristyl myristate, stearyl stearate; 13. beeswax derivatives, e.g. polyoxyethylene sorbitol beeswax; 14. vegetable waxes including carnauba and candelilla waxes; 15. phospholipids such as lecithin and derivatives; 16. sterol including cholesterol and cholesterol fatty acid

esters; 17. amides such as fatty acid amides, ethoxylated fatty acid amides, solid fatty acid alkanolamides.

Humectants may be added to the composition to increase the effectiveness of the emollient, to reduce scaling, to stimulate removal of built-up scale and improve skin feel. By way of example only, suitable humectants include polyhydric alcohols, such as glycerol, polyalkylene glycols, alkylene polyols their derivatives, propylene glycol, dipropylene glycol, polypropylene glycol, polyethylene glycol, sorbitol, hydroxypropyl sorbitol, hexylene glycol, 1,3-butylene glycol, 1,2,6-hexanetriol, ethoxylated glycerol, propoxylated glycerol and the like. The amount of humectant may be in the range of about 0.5-30 wt% and preferably between 1-15 wt%.

In topical skin care applications, a variety of active substances may be advantageously employed. By way of example only suitable active agents which may be incorporated into the cosmetic composition include anti-aging active substances, anti-wrinkle active substances, hydrating or moisturizing or slimming active substances, depigmenting active substances, substances active against free radicals, anti-irritation active substances, sun protective active substances, anti-acne active substances, firming-up active substances, exfoliating active substances, emollient active substances, and active substances for the treating of skin disorders such as dermatitis and the like.

By way of example only, in the case of hydration, one or more moisturizers may be used, such as glycerin or urea, in combination with one or more precursor agents for the biosynthesis of structural proteins, such as hydroxyproline, collagen peptides and the like.

By the way of example only, in case of slimming, at least one ketolytic agent or an alpha-hydroxyacid such a salicylic acid or 5-n-octanoic acid may be used in combination with at least one liporegulating agent such as caffeine.

By way of example only, in the case of depigmentation, at least one keratolytic agent is used in combination with a depigmenting agent such as hydroquinone, tyrosinase inhibitor (koscic acid), ascorbic acid, kojic acid and sodium metabisulfite and the like.

By way of example only, in the case of protection against free radical agents, vitamin E (against COO^\cdot radicals), superoxide dismutase (against O_2^\cdot free radicals) and sugar and caffeine (against OH^\cdot free radicals).

By way of example only, in the case of anti-aging, moisturizers, sunscreens,
5 alpha-hydroxyacids, salicylic acid or surface restructuring agents may be used in combination with enzymes for the repair of DNA, vascular protective agents or phospholipids rich in oligoelements and polyunsaturated fatty acids.

By way of example only, in the case of anti-acne agents, keratolytics, such as salicylic acid, sulfur, lactic acid, glycolic, pyruvic acid, urea, resorcinol and N-
10 acetylcysteine, and retinoids, such as retinoic acid and its derivatives may be used.

By way of example only, in the case of anti-inflammation, non-steroidal anti-inflammatory agents (NSAIDS) may be used, such as propionic acid derivatives, acetic acid, fenamic acid derivatives, biphenylcarboxylic acid derivatives, oxicams, including but not limited to aspirin, acetaminophen, ibuprofen, naproxen, benoxaprofen,
15 flurbiprofen, fenbufen, ketoprofen, indoprofen, piroprofen, carprofen, and bucloxic acid and the like.

By way of example only, in the case of antibiotics and antimicrobials may be included in the composition of the invention. Antimicrobial drugs preferred for inclusion in compositions of the present invention include salts of β -lactam drugs,
20 quinolone drugs, ciprofloxacin, norfloxacin, tetracycline, erythromycin, amikacin, triclosan, doxycycline, capreomycin, chlorhexidine, chlortetracycline, oxytetracycline, clindamycin, ethambutol, hexamidine isethionate, metronidazole, pentamidine, gentamicin, kanamycin, lineomycin, methacycline, methenamine, minocycline, neomycin, netilmicin, paromomycin, streptomycin, tobramycin, miconazole and
25 amanfadine and the like.

By way of example only, in the case of sunscreen protection, suitable agents include 2-ethylhexyl p-methoxycinnamate, 2-ethylhexyl N,N-dimethyl-p-aminobenzoate, p-aminobenzoic acid, 2-phenyl p-methoxycinnamate, 2-ethylhexyl octocrylene, oxybenzone, homomenthyl salicylate, octyl salicylate, 4,4'-methoxy-t-
30 butyldibenzoylmethen, 4-isopropyl dibenzoylmethane, 3-benzylidene camphor, 3-(4-

methylenediphenyl ether, camphor, titanium dioxide, zinc oxide, silica, iron oxide, and mixtures thereof and the like. The sunscreens disclosed therein have, in a single molecule, two distinct chromophore moieties which exhibit different ultra-violet radiation absorption spectra. One of the chromophore moieties absorbs predominantly in the UVB radiation range and the other absorbs strongly in the UVA radiation range. These sunscreens provide higher efficacy, broader UV absorption, lower skin penetration and longer lasting efficacy relative to conventional sunscreens. Generally, the sunscreens can comprise from about 0.5% to about 20% of the compositions useful herein. Exact amounts will vary depending upon the sunscreen chosen and the desired Sun Protection Factor (SPF). SPF is a commonly used measure of photoprotection of a sunscreen against erythema.

By way of example only, in the case of sunless tanning agents include, dihydroxyacetone, glyceraldehyde, indoles and their derivatives, and the like.

The composition may include cleansing surfactants. Cleansing surfactants are cationic, anionic, amphoteric or non-ionic surfactants which are water-soluble and produce a consumer-acceptable amount of foam. Nonionic surfactants are well-known materials and have been used in cleansing compositions. Therefore, suitable nonionic surfactants include, but are not limited to, compounds in the classes known as alkanolamides, block copolymers of ethylene and propylene, ethoxylated alcohols, ethoxylated alkylphenols, alkyl polyglycosides and mixtures thereof. In particular, the nonionic surfactant can be an ethoxylated alkylphenol, i.e., a condensation product of an alkylphenol having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with ethylene oxide, the ethylene oxide being present in an amount equal to at least about 8 moles ethylene oxide per mole of alkylphenol. Examples of compounds of this type include nonylphenol condensed with about 9.5 moles of ethylene oxide per mole of phenol; dodecylphenol condensed with about 12 moles of ethylene oxide per mole of phenol; dinonylphenol condensed with about 15 moles of ethylene oxide per mole of phenol; octylphenol condensed with about ten moles of ethylene oxide per mole of phenol; and diisooctyl phenol condensed with about 15 moles of ethylene oxide per mole of

phenol.

A wide variety of acids, bases, buffers, and sequestrants can be utilized to adjust and/or maintain the pH and ionic strength of the compositions useful in the instant invention. Materials useful for adjusting and/or maintaining the pH and/or the ionic strength include sodium carbonate, sodium hydroxide, hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, sodium acetate, sodium hydrogen phosphate, sodium dihydrogen phosphate, citric acid, sodium citrate, sodium bicarbonate, triethanolamine, EDTA, disodium EDTA, tetrasodium EDTA, and the like.

The polymer network may be useful as a solubilization agent in cosmetic and personal care applications. A self-assembling system comprising the reversibly gelling polymer network exhibits thermogelation, pH sensitivity, and the ability to solubilize hydrophobic agents in aqueous media. When poloxamer is copolymerized with poly(acrylic acid) (PAA) according to the invention, the resulting copolymer network is bioadhesive and can be applied in a number of therapies. The materials described in this invention combine "reverse" thermoviscosification mucoadhesion, solubilization of hydrophobic and difficult to manage moieties, easy formulation, and protection of agents from degradation to provide a superior medium for cosmetic and personal care products.

The reversible viscification of the polymer network at elevated temperatures makes the materials ideal for use as thickening agents in cosmetic and personal care products at any temperature above the transition. Another use of the "thickening" of solutions containing the polymer network as a thickener supplement in emulsions. Currently emulsifiers are often negatively effected by increased temperatures. An additive with reverse thermal viscification properties, however, would react in exactly the opposite way, increasing its ability to emulsify as it gained three-dimensional structure upon heating above its transition temperature.

In the applications where the reversibly gelling polymer composition can act as a surfactant, the polymer network will have the ability to act as a primary emulsifier without any (or with very little) addition of traditional surfactant. The responsive polymer network will also act as a stabilizer for oil-soluble ingredients that would

conventionally need to be solubilized by oils in formulation. The hydrophobic portion of the polymer network (PPO) forms domains which act as reservoirs for an oil-soluble or hydrophobic additive, such as an oil droplet, as is illustrated in Figure 9. These two features of the material of the invention would enable it to be used as a base in a cosmetic formulation that would be non-greasy due to lack of oils, such as petrolatum and mineral oil. The increase in viscosity above the transition temperature adds structure and yield value to the water phase and results in a highly stable emulsion.

Thus, poloxamer:poly(acrylic acid) polymer network compositions are valuable materials in the formulation of cosmetic and personal care products. In particular, they may be useful as rheology modifiers, provide a cushioning effect on the skin, offer barrier properties and controlled release of actives. In addition, the polymer composition may serve as a surfactant and is compatible with most ingredients used in the cosmetic industry.

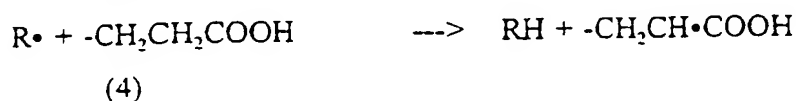
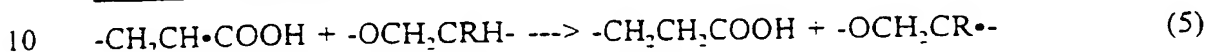
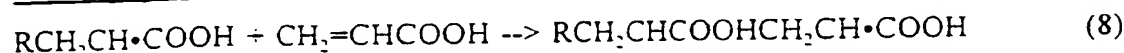
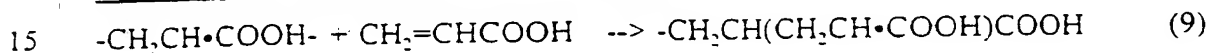
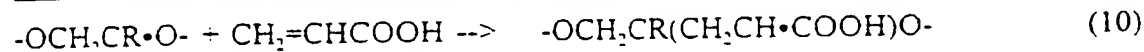
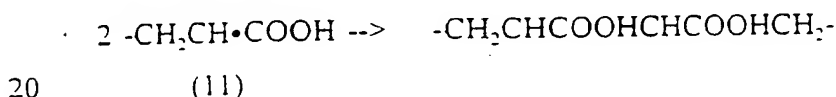
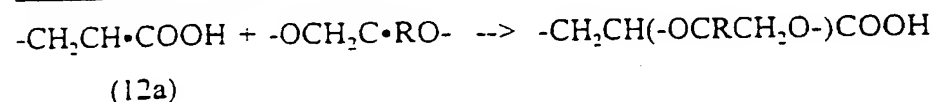
The above properties of the poloxamer:poly(acrylic acid) polymer network provides a cosmetic composition that spreads evenly and smoothly and which leaves a lubricious feel to the skin. A sensory evaluation was conducted with seven random volunteers in order to determine the sensory effect of a cream formulation on the skin. An oil-free cosmetic formulation was prepared substantially as set forth in Example 33(b) and was compared to Nivea Oil Free, a product of Beiersdorf of Germany. Volunteers placed unmarked samples on the skin and evaluated the formulation based upon its feel and texture. The samples were rated on a scale of 1 (bad) to 5 (good). The oil-free cosmetic formulation of the present invention scored equally to the Nivea Oil Free moisturizing product. Both samples scored a 3.5 on the rating scale.

The observed thermal behavior of the reversibly gelling polymer network suggests that the increase in viscosity is due to aggregation of the hydrophobic portion of the poloxamer at the transition temperature which, because of bonding with the poly(acrylic acid) component, serve as temporary cross-links which physically bridge adjacent chains of poly(acrylic acid) to provide a viscous gel-like extended polymer structure. The aggregation process may be understood as occurring as shown in Figure

10, in which a backbone 20 represent poly(acrylic acid), a thin band 24 represents the hydrophobic poly(propylene) glycol region of the poloxamer and a thick band 26 represents the hydrophilic poly(ethylene glycol) region of the poloxamer. Below the transition temperature, the polymer network is randomly arranged, as is shown in Figure 10(a). At or above the transition temperature, the hydrophobic regions 24 associate to form aggregations or micelles 28, as is shown in Figure 10(b). The association increases the effective molecular weight of the polymer network composition with the corresponding increase in viscosity.

A general method of making the poloxamer:PAA polymer network compositions of the present invention comprises solubilization of the poloxamer in acrylic acid monomer, followed by polymerization of the monomer to PAA. Polymerization may be accomplished by addition of a polymerization initiator or by irradiation techniques. The initiator may be a free radical initiator, such as chemical free radical initiators and uv or gamma radiation initiators. Conventional free radical initiators may be used according to the invention, including, but in no way limited to ammonium persulfate, benzoin ethyl ether, benzyl peroxide, 1,2'-azobis(2,4-dimethylpentanitrile) (Vazo 52) and azobisisobutyronitrile (AIBN). Initiation may also be accomplished using cationic or ionic initiators. Many variations of this methods will be apparent to one skilled in the art and are contemplated as within the scope of the invention. For example, the poloxamer component may be dissolved in an acrylic acid/water mixture instead of pure monomer. It may be desirable to remove unreacted monomer and/or free poloxamer from the resultant polymer network. This may be accomplished using conventional techniques, such as, by way of example, dialysis or Soxhlet extraction.

Without intending to be bound by a particular mechanism or structure, the following scheme represents a possible chemical mechanism for the formation of the system here described. These mechanisms are presented by way of explanation and are no way limiting of the invention. It is contemplated that these or other mechanistic routes may in fact occur in the formation of the polymer network of the present invention.

I. InitiationII. Hydrogen AbstractionIII. Chain TransferIV. PropagationV. Side Chain Branching Off AA BackboneVI. AA Branching off Poloxamer BackboneVII. Homogenous TerminationVIII. Heterogenous Termination with bonding of Pluronic to PAA

The scheme for bonding of poloxamer to acrylic acid may involve initiation (eq 1), hydrogen abstraction from the propylene or ethylene moiety of the poloxamer (eq 3), and attachment to acrylic acid via addition across the unsaturated bond (eq 10). Propagation (eq 8) leads to the final PAA.

Alternatively, the mechanism may proceed by initiation according to eqs. (1) and (2). propagation to form PAA (eq.8), a chain transfer reaction to generate a reactive poloxamer moiety (eq. 5), followed by addition of the reactive poloxamer

moiety to the unsaturated bond of acrylic acid (eq. 10) and subsequent propagation of the PAA chain.

Thus the polymer network may include a plurality of poly(acrylic acid)) units bonded to a single poloxamer unit or, alternatively, a plurality of poloxamer units bound to a single PAA backbone. Combinations of these alternatives are also a possibility.

Reverse phase polymerization may be used to prepare polymer network beads by dispersion of the poloxamer and acrylic acid monomer mixture in a nonpolar solvent such as hexane or heptane. The aggregating polymer/monomer solution is dispersed with agitation in the nonpolar solvent in order to suspend droplets of the solution. Polymerization of the monomer is initiated by conventional means (i.e., addition of a initiator or irradiation) in order to polymerize the monomer and form responsive polymer network beads. See, U.S.S.N. 08/276,532 filed July 18, 1995 and entitled "Useful Responsive Polymer Gel Beads" for further information on the preparation of polymer gel beads, herein incorporated by reference. Such a method may be particularly desirable to provide a heat sink for the heat generated in the exothermic polymerization reaction.

The polymer network complexes and aqueous gelling solutions of the present invention may be understood with reference to the following examples, which are provided for the purposes of illustration and which are in no way limiting of the invention.

Example 1 This example describes the synthesis of a polymer network and an aqueous responsive polymer network solution prepared using a triblock polymer of poly(ethylene glycol) and poly(propylene glycol), Pluronic® F27 polyol, and poly(acrylic acid). This example also characterizes the gelation and the physical properties of the resultant polymer network.

Synthesis. Block copolymer of poly(propylene glycol) (PPG) and poly(ethylene glycol) (PEG) having triad ABA structure $(\text{PEG})_A(\text{PPG})_B(\text{PEG})_A$ (Pluronic® F127 NF polyol, Poloxamer 407 NF polyol, where "F" means Flakes, "12" means 12X300=3600 - MW of the PPG section of the block copolymer. "7" PEG in

the copolymer is 70 wt%, and nominal molecular weight is 12,600) from BASF (3.0 g) was dissolved in 3.0 g acrylic acid (Aldrich). This represents a substantially 1:1 weight ratio of Pluronic® F127 polyol and poly(acrylic acid). The solution was deaerated by N₂ bubbling for 0.5 h and following addition of 100 ml of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70 °C for 16 h resulting in a transparent polymer.

Viscosity measurements. A known amount of the resultant polymer was suspended in 100 ml deionized water into which NaOH was added. Following swelling for 3 days while stirring, the pH of the resulting fine suspension was adjusted to 7. Samples of 15 ml each were taken, and pH in each vial was adjusted to desired value by addition of 1 M HCl or NaOH. Samples were then kept overnight and their viscosities were measured at different temperatures using Brookfield viscometer using either an SC4-18 or an SC4-25 spindle.

A control experiment was done with a physical blend of Pluronic® F127 polyol and poly(acrylic acid) (MW 450,000) available from Aldrich. Pluronic® F127 polyol and poly(acrylic acid) were dissolved together in deionized water at 1 wt% total polymer concentration and the resultant solution was adjusted to pH 7, stirred and kept in refrigerator. The responsiveness of the polymer network composition and the physical blend to temperature and pH is illustrated in Figs. 1, 11 and 12. Figs. 1 and 2 clearly demonstrate that the synthetic route outlined above resulted in a polymer network system that is sensitive to pH and temperature of the environment. Note that the liquid-gel transition is very sharp, occurring over a very small temperature change or pH (see, Figure 11). Figure 12 is a viscosity vs. temperature graph comparing the gelling characteristics of the responsive polymer network composition and the physical blend. The blend prepared by physically mixing of the triblock PEG/PPG/PEG polymer and poly(acrylic acid) did not exhibit viscosifying effect either as a function of temperature or pH.

It was generally observed that 0.5-5 wt% polymer network compositions made of Pluronic® F127 polyol and poly(acrylic acid) viscosify at temperatures of around 30 °C and higher if pH is adjusted to 6 or higher. The gelling effect was observed in

polymer network compositions standing 3 months or longer. Repeated heating and cooling of responsive polymer network compositions did not cause deterioration of the polymer network or the gelling effect. Solutions of either Pluronic® F127 polyol or poly(acrylic acid) (1-5 w% in water, adjusted to pH 6 or higher) or physical blends of
5 the two lacked the reverse thermal gelling effects found for polymer network compositions.

Example 2. This example describes a standard operating procedure for the manufacture of the reversible gelling polymer network.

The procedure is based upon a 50 liter production. A NaOH solution was
10 prepared by dissolving 131.8 g NaOH pellets in 131.8 mL DI water (50% solution). The NaOH was allowed to dissolve completely. The NaOH solution will be used to convert a percentage of the acrylic acid to sodium acrylate in situ. Acrylic acid monomer (4 kg) is charged into a monomer feed tank and agitated at 250 rpm. NaOH is added slowly. The precipitate formed as the acrylic acid is neutralized to
15 sodium acrylate is allowed to dissolve. Pluronic® F127 (3.5 kg) is slowly added to the monomer feed tank. Pluronic® F127 is dissolved under continued agitation. Norpar 12 (a refined C-12 alkane) is added to the reaction vessel (37 L). The mixture is agitated at 100 rpm. Stabilizer solution of Ganex V-126 is prepared in 2L Norpar 12 and added to the reactor under agitation.

20 A reaction vessel was degassed using a nitrogen sparge introduced from the bottom of reactor and was continued throughout the reaction. Initiator (13.63 g Lauryl peroxide and 4.23 g Vazo 52 in 0.7 kg acrylic acid monomer) is introduced into the monomer solution. The monomer solution was transferred to the reaction vessel. Agitation was increased to 150 rpm. Nitrogen sparging continued for an additional 20
25 minutes and then heating began. Heating began at a rate of 0.5-1.0 °C/min up to 75 °C. The reaction began to exotherm at about 45-50 °C and is allowed to continue without cooling until a maximum is reached. It is then cooled to 75 °C using forced cooling. The reaction continued for 12 hours and was then cooled to 35 °C. The slurry was transferred into pails and the polymer beads were allowed to settle.

30 The slurry was filtered through Buchner Funnels with filter paper (11 µm pore

size) until the bulk of the Norpar had been removed from the beads. The beads were washed three times with heptane. The filtered beads were transferred to a Pyrex drying tray and spread on the tray in a uniform layer. The beads were dried under vacuum for 4 hours at 40-50 °C. The dried beads were analyzed as follows.

5 Elemental analysis. The elemental analysis was performed by Quantitative Technologies, Inc., Whitehouse, NJ using a Perkin Elmer 2400 CHN Elemental Analyzer. Analysis provided C (52.49%), H (7.50%), N (< 0.05%), the balance assumed to be oxygen (39.96%).

10 Thermal Gravimetric Analysis (TGA). The TGA method was performed by Massachusetts Material Research, Inc., West Boylston, MA using a Dupont TGA model 295. The assay was run using a temperature ramp from 30 to 500 °C/min. The resolution for the system was set to 4 (1.0 °C/min for all slope changes). The data was analyzed using the first derivative of the curve and using maxima and minima to mark transitions. The moisture content was also calculated in this manner. The first
15 derivative yielded three maxima. The first transition (moisture) was 3.0% by weight. the second transition was 14.0% by weight and the third was 67.02% by weight. Residue (15.98% remained).

20 Molecular weight determination by gel permeation chromatography (GPC). The molecular weight was determined by GPC on a Hewlett Packard 1100 Liquid Chromatography system with a Viscotech T60 Triple Detector system. Three Waters Ultrahydrogel columns, 1000, 500 and 250 Å, were used for the separation. The mobile phase was 0.1M NaNO₃ and 0.01M K₂HPO₄ salt solution, pH adjusted with phosphoric acid to a pH of 8.0 ± 0.1. The flow rate for the separation was 0.9 mL/min. The column temperature was maintained at 15 °C. The injection volume for
25 the assay was 50 µL. A PEG molecular weight standard of 23,000 Daltons was used to align the detectors. The result for the assay were:

M_n : 341,700 Daltons

M_p : 1,607,000 Daltons

M_w : 2,996,000 Daltons

30 Free poloxamer determination by GPC. The amount of free (unbound)

poloxamer in the polymer matrix was determined using the above GPC method and comparing the poloxamer peaks to that of a standard poloxamer solution. The typical result is approximately 18-22% free poloxamer by weight.

5 The effect of both the bonded and non-bonded poloxamer on the gelation properties of the responsive polymer network has been determined by extraction of the non-bonded poloxamer from the material. Such extraction studies have established that the graft co-polymer alone exhibits the characteristic reverse thermal gelation of the composition; however, the presence of non-bonded poloxamer component modulates the gelation process. The non-bonded poloxamer component
10 can affect the temperature of transition (from liquid to gel) and the degree of transition and assists in a more controlled and reproducible transition.

Bound poloxamer determination by ethylene oxide (EO) titration. The EO titration was performed as follows. A 5 gm sample of the product polymer was extracted in dichloroethane for three hours at reflux temperatures. The solid is
15 removed and dried under a vacuum for 12 hours at room temperature. The dry material is then analyzed using ASTM method D 2959-95, "Standard Test Method for Ethylene Oxide Content". The amount of EO in the sample is related to the amount of poloxamer bound to the polymer. The typical result is approximately 15 % by weight of EO.

20 The relative amount of free poloxamer may be varied dependent upon the relative proportions of starting materials and the method of polymerization. Although the residual solids presumably contain only poloxamer which is bonded to the poly(acrylic acid), i.e., a graft co-polymer, the material still shows strong viscosification when it is neutralized and dissolved in water. However, the
25 temperature of viscosification is increased substantially and the degree of viscosification per gram of total solids is increased by removal of free poloxamer. Thus, the free poloxamer plays a role in modifying the extent and temperature of viscosification. The poloxamer undergoes conformational changes and changes to the critical micelle concentration as a function of temperature. The poloxamer will
30 change from an open, non-aggregated form to a micellular, aggregated form with

changes in temperature.

Residual acrylic monomer determination by gas chromatography (GC). The residual acrylic acid monomer was determined by GC analysis using a Hewlett Packard GC 5890A, using a HP-FFDAP-TPA 10 m x 0.53 mm x 1 μ m column. The sample
5 was extracted and run in methanol. Using an internal standard ratio, the sample was compared to a one point calibration. The typical results for this assay were below 70 ppm acrylic acid monomer.

Residual Norpar solvent by GC. The residual Norpar in the sample was determined by GC using the above method and comparing the Norpar peaks to that of
10 a standard. The typical results were below 1.5 wt%.

UV-vis spectrum. Optical clarity data of UV-vis spectrophotometer was obtained. A 1.0% solution in water was prepared and measured at 420 nm. Transmittance (%) was typically greater than 90%.

Differential scanning calorimetry (DSC). The DSC was performed by
15 Massachusetts Material Research, Inc., West Boylston, MA using a temperature ramp from 30 to 350 °C at 5 °C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The assay yielded one endothermic event at 265 °C, typically 270 J/g.

Examples 3-9. This example describes the synthesis of a several reversible
20 thermal gelling polymer network prepared using a variety of poloxamers and poly(acrylic acid). The gelation and the physical properties of the resultant polymer network compositions are reported in Table 2.

Table 2.

example	poloxamer	poloxamer composition	polox- amer: PAA	trans. temp.	comments
3	Pluronic® F88 Prill polyol	2400 MW PPG; 80 wt% PEG; nominal MW 11,400	1:1	48 °C	viscosity response curve shown in Figure 13
4	Pluronic® F127 NF polyol	3600 MW PPG; 70 wt% PEG; nominal MW 12,600	1:1	30 °C	pentaerythritol triallyl ether crosslink agent used
5	Pluronic® P104 polyol	3000 MW PPG; 40 wt% PEG; nominal MW 5,900	1:1	28 °C	viscosity response curve shown in Figure 14
6	Pluronic® P123 polyol	3600 MW PPG; 30 wt% PEG; nominal MW 5,750	1:1	25 °C	viscosity response curve shown in Figure 15
7	Pluronic® F127/Pluronic® F108 polyol blend (1:1)	as above	1:1.7	42 °C	polymer solid formed, dried; resolubilized in neutralizing solution
8	Pluronic® F88 polyol	as above	1:1.7	80 °C	polymer solid formed, dried; resolubilized in neutralizing solution
9	Pluronic® F127/Pluronic® F88 polyol blend (1:1)	as above	1:1.7	85 °C	polymer solid formed, dried; resolubilized in neutralizing solution

Example 10. The following example demonstrates the effect of hydrophilic/hydrophobic ratio on the gelling temperature. Polymer network compositions were prepared from the following poloxamers shown in Table 3.

Table 3. Composition of poloxamers investigated.

triblock polyol polymer composition	MW of PPG block	wt% of PEG block
P103 (PEG) ₃₇ (PPG) ₅₆ (PEG) ₃₇	3250	50
P104 (PEG) ₂₅ (PPG) ₅₆ (PEG) ₂₅	3250	40
P105 (PEG) ₁₆ (PPG) ₅₆ (PEG) ₁₆	3250	30

Table 3 shows that in this series, the fraction of PEG is reduced when the molecular weight of the PPG block is kept constant. Linse (*Macromol.* 26:4437-4449 (1993)) report phase diagrams for these copolymers in water were calculated and it was shown that two-phase boundaries corresponding to the beginning of aggregation are almost unaffected by the molecular mass, given a constant PEG/PPG ratio, whereas these boundaries shifted to lower temperature as the PEG content of the polymer is reduced at constant mass. The strong dependence of the PEG/PPG ratio is a consequence of the differing solubilities of PEG and PPG in water at the elevated temperatures. Thus one would suppose that aggregation that causes viscosification in the responsive polymer network composition should shift to lower temperature as PEG fraction decreases.

The poloxamer (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 20 min. and following addition of the 100 :1 of freshly prepared saturated solution of ammonium persulfate in deionized water was kept at 70°C for 16 h resulting in a strong whitish polymer. A sample of the polymer obtained (0.4 g) was suspended in 40 ml deionized water into which NaOH was added. Suspended responsive polymer network particles were allowed to dissolve under constant stirring. The resulting 1 wt% polymer network solutions were subjected to the viscosity measurement at shear rate of 132 or 13.2 sec⁻¹ using a SC4-18 spindle. It can be seen from Figure 16 that, firstly, viscosity of the 1 wt%

responsive polymer network solutions before viscosification (at 20-24°C) decreases in the series (PEG)₃₇(PPG)₅₆(PEG)₃₇(F103) > (PEG)₂₅(PPG)₅₆(PEG)₂₅(F104) > (PEG)₁₆(PPG)₅₆(PEG)₁₆(F105) and, secondly, the temperature at which gelation shifts from about 45°C for (PEG)₃₇(PPG)₅₆(PEG)₃₇ to about 35°C for (PEG)₂₅(PPG)₅₆(PEG)₂₅ and (PEG)₁₆(PPG)₅₆(PEG)₁₆. Both results are in excellent agreement with the theory set forth in Linse.

Example 11. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein hemoglobin from poloxamer:poly(acrylic acid) polymer network is described.

Synthesis. Pluronic® F127 (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 0.5 h and following addition of 100 Fl of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer. The resultant responsive polymer network obtained (5 g) was suspended in 95 ml deionized water into which NaOH was added. The resulting suspension was allowed to swell for 7 days.

Hemoglobin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 0.25 mg/ml solution of human hemoglobin (Sigma) in deionized water adjusted to pH 8. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (# 2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the hemoglobin-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 0.25 mg/ml hemoglobin solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples of the receiver phase were withdrawn from time to time and their absorbance was measured spectrophotometrically at 400 nm.

To calculate hemoglobin concentrations, corresponding calibration curves (absorbance in PBS versus hemoglobin concentration) were generated. The results of the kinetic experiment are presented in Figure 17. It can be seen that the rate of hemoglobin release from the polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in the polymer network at elevated temperatures (see Figure 1). The protein released from the polymer network composition still retained its native structure, as was determined by comparison of uv-vis spectra of release hemoglobin and natural hemoglobin.

Example 12. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein lysozyme from a polymer network is reported.

Lysozyme loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 1 mg/ml solution of chicken egg-white lysozyme (Sigma) and 1.5 mg/ml sodium dodecyl sulfate (Aldrich) in deionized water adjusted to pH 8.5. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (# 2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the lysozyme-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 1 mg/ml lysozyme solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples were withdrawn and their absorbance measured spectrophotometrically at 280 nm. A calibration curve was prepared for lysozyme concentration ranging from 0 mg/ml to 0.5 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 18. It can be seen that the rate of lysozyme release from the responsive polymer network composition was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

In order to demonstrate the retention of the enzymatic activity of lysozyme, the lysozyme released from the responsive polymer network composition was assayed using *Micrococcus lysodeikticus* cells and compared to that of original lysozyme. The enzymatic activity of lysozyme was the same, within the error of the assay (15%), as that of the original lysozyme. Control without lysozyme in presence of sodium dodecyl sulfate did not show any appreciable lysis of the cells.

Example 13. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of insulin from a responsive polymer network composition is reported.

Insulin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 5 mg/ml solution of bovine Zn^{2+} -insulin (Sigma) in deionized water adjusted to pH 7. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (# 2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the insulin-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 5 mg/ml insulin solution. After the feed solution had been loaded into the cell, the timing commenced. Samples were withdrawn and their absorbance was measured spectrophotometrically at 280 nm. A calibration curve was prepared for insulin concentration ranging from 0 mg/ml to 1.25 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 19. The rate of insulin release from responsive polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

Example 14. This example demonstrates the preparation of a sterile reversibly gelling polymer network aqueous composition and the stability of the composition to sterilization. The polymer network is prepared as described in Example 1, except that

the composition is prepared at 2 wt% Pluronic® F127 polyol/poly(acrylic acid). After dissolution of the 2 wt% polymer network in water, the viscosity is measured. The composition then is sterilized by autoclaving at 121°C, 16 psi for 30 minutes.

Viscosity is determined after sterilization. The corresponding curves for viscosity (a) before and (b) after sterilization are shown in Figure 20 and establish that minimal change in the viscosity profile of the material has occurred with sterilization.

Examples 15-30. These examples show additives which may be used to affect the transition temperature overall viscosification of the polymer network composition.

A 1 wt% polymer network was prepared in deionized water at pH 7 in which a variety of additives were included in the composition. The effect of the additive was determined by generation of a Brookfield viscosification curve. Results are reported in Table 4.

Table 4.

Example No.	Additive (wt%)	Effect of additive on:	
		transition temp. (°C)	final viscosity (% change)
15	1,2-methyl pyrrolidone (5)	I (1.8)	N
16	Rhodapex CO-436 (2)	I (1.6)	N
17	Dow Corning 190 (2)	I (5)	I (150)
18	isopropyl alcohol (0.5)	I (3.1)	I (45)
19	Pluronic® L122 (1)	D (4.4)	D (13)
20	Pluronic® F88 (1)	N	I (41)
21	Tween 80 (0.5)	N	I (18)
22	Germaben® II (1)	D (9)	I (100)
23	Iconol NP-6 (1)	D (9)	I (500)
24	Plurafac C-17 (0.5)	I (5.2)	D (36)
25	Dow Corning 193 (0.75)	I (4.1)	D (12)
26	glycerin (5)	D (2)	N
27	UC 50-HB- 170/EO/PO random copolymer (0.5)	N	N
28	PVP K15 (1)	N	N
29	MAPTAC (1)	N	D (8)
30	potassium chloride (0.25)	N	D (34)

I = increase; D = decrease; and N = no change

Example 31. Because of the surfactant nature of the polymer network composition coupled with the gelation effect of the polymer network composition, it is possible to prepare formulation which are 100% water-based, but which are lubricous and thick.

5 Formulations including a nonionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 5.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Emulsifying Wax NF ¹	2.5
Mineral Oil	5.0

¹ Polowax available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains a nonionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

20 Formulations including a cationic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 6.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Behenrimonium Methosulfate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹ Incroquat Behenyl TMS available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount

of all ingredients is added and allowed to mix to homogeneity. This formulation contains a cationic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Formulations including an anionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 7.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Cetearyl Phosphate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹ Crodatos CES available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains a anionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Example 32. Acne Medication: An oil-free, clear, anti-acne treatment is made by combining the following ingredients utilizing conventional mixing techniques:

Table 8.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network prepared as in Example 1	20.0
Glycerin USP	5.0
Salicylic Acid	2.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
USP Purified Water	72.2

¹ Germaben®II available from Sutton Laboratories

To one vessel, equipped with a Lightnin' Mixer with a 3 blade paddle prop,

the full amount of USP Purified Water to 100% w/w is added. While maintaining the temperature, with moderate to vigorous mixing, the formula amount of Disodium EDTA, Citric Acid, DL-Panthenol, Glycerin, Salicylic Acid, and Germaben® II is added. These materials are allowed to dissolve at 50°C. After dissolution, the vessel
5 is then cooled to 20°C. To another vessel, equipped with a high efficiency homogenizer, the formula amount of responsive polymer network is added. The responsive polymer network vessel is then cooled to 4°C. After cooling, while vigorously homogenizing, the contents of the first vessel is added to the second vessel, and allowed to mix to homogeneity.

10 The composition displays a flowable clear jelly appearance with excellent spreadability and absorption characteristics at room temperature, and after heating the formulation to 32°C, the composition thickens to a gel-like consistency.

Example 33. (a) Oil-free Moisturizer (formulation I): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional
15 mixing techniques:

Table 9.

Ingredient	% w/w
10% wt 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
PPG-2 Myristyl Ether Propionate	3.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
Citric Acid	0.01
USP Purified Water	71.19

¹ Germaben® II available from Sutton Laboratories

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The viscosity vs. temperature curve is shown in Figure 21 and demonstrates that addition of adjuvants to the composition significantly enhances the responsive polymer network maximum viscosity (>900,000 cps). The use of the poloxamer:poly(acrylic acid) polymer network in the formulation also imparts a unique viscosification effect after application to the skin, which is not evident in typical commercial O/W emulsion formulations (See, Figure 21b).

(b) Oil-free Moisturizer (formulation II): An oil-free, lubricious moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 10.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	2.0
Glycerin USP	5.0
Carbopol 980	1.0
D-panthenol, propylene glycol	1.0
Preservative	1.0
Hydrolyzed protein (and) hyaluronic acid	0.5
Sodium hydroxide	0.2
USP Purified Water	90

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to 26°C, the composition thickens to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 34. Sunscreen Lotion. An oil-free, lubricious sunscreen lotion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 11.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	2.0
Glycerin USP	8.0
Carbopol 980	1.0
Parsol MCX	7.0
Myristyl Ether Propionate	5.0
Preservative	1.0
Cyclomethicone	1.0
Sodium hydroxide	0.2
USP Purified Water	74

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C. the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 35. Facial mask. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 12.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	1.0
Polyvinyl alcohol	6.0
Polyvinylpyrrolidone (20%)	5.0
D-panthenol, propylene glycol	1.25
Propylene glycol	1.25
USP Purified Water	85.5

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Facial toner. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 13.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	0.01
Hydroxyethyl cetyldimonium phosphate	1.00
PEG-40 hydrogenated castor oil	2.00
D-panthenol, propylene glycol	0.50
Glycerin	2.00
Witch hazel extract	5.00
USP Purified Water	88.49

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Solubilization studies of model hydrophobic agents in the poloxamer: poly(acrylic acid) polymer network: estradiol and progesterone. This example is presented to demonstrate the solubilization of a hydrophobic agent in the polymeric network. Progesterone and estradiol were used as the hydrophobic agents in this model solubilization study.

Acrylic acid (99%), fluorescein (98%), β -estradiol (98%), and progesterone (98%) were all obtained from Aldrich and used as received. Pluronic® F127 NF was obtained from BASF. Poly(oxyethylene-b-oxypropylene-b-oxyethylene)-g-poly(acrylic acid) copolymers (responsive polymer network) were synthesized by free-radical polymerization of acrylic acid in the presence of poloxamer as described above. The polymer network copolymers discussed here were composed of about 1:1 ratio of PAA to poloxamer. The rheological properties of polymer network were assessed using LVDV-II+ and RVDV-II+ Brookfield viscometers. The microscopic light scattering of 21 nm poly(styrene) latex particles in deionized water and 1 w% reversibly gelling polymer network was measured using He-Ne laser as described previously (See, Matsuo, E.S., Orkisz, M., Sun, S.-T., Li, Y., Tanaka, T., Macromolecules, 1994, 27, 6791). The solubility of fluorescein and hormones in aqueous solutions was measured by the equilibration of excess solubilize with the corresponding solution following removal of undissolved species by centrifugation and filtration. Hydrophobic agents were assayed spectrophotometrically at 240 (progesterone) or 280 nm (estradiol), or by using 70/30 w/w H₂SO₄/MeOH (Tsilifonis-Chafetz reagent). In vitro hormone release studies were conducted using thermostatted, vertical Franz cells. Spunbonded polypropylene microfilters (micron retention, 15-20) were used as a membrane separating feed and receiver phases in

Franz cells. The responsive polymer network, water, ethanol, and 20% PEG in water were observed to wet the membrane. The receiver solutions consisted of 20 w% PEG in water (pH 7) and were stirred by magnetic bars. The feed phases composed of responsive polymer network were loaded with either estradiol or progesterone. Each hormone was dissolved in ethanol and the resulting solution was added into the responsive polymer network.

Equilibrium solubility vs. temperature plots for estradiol and progesterone (partition coefficient octanol/water (P) 7200 and 5888, respectively, in aqueous solutions of Pluronic® F127 polyol and responsive polymer network are presented in Figure 22. It can be seen that increasing temperature and concentration (C) of polymers in the solution raises the amount of the hormone dissolved. In Figure 22a, vertical lines represent critical micellar temperatures (CMT) for corresponding Pluronic F127 polyol solutions. It is interesting to note that the slope of the solubility-temperature plots increased as temperature reached CMT, indicating that solubilization in the Pluronic solutions was predominantly due to the formation of micelles. Similar trend was observed in the responsive polymer network solutions. The S values in 5% aqueous solutions of branched PAA did not exceed 15 and 40 $\mu\text{g/mL}$ at 60 °C for estradiol and progesterone, respectively. The solubility values found for responsive polymer network were the same as S in parent Pluronic solutions of equivalent concentrations. Therefore, it may be suggested that solubilization behaviors of the responsive polymer network are governed by the properties of the poloxamer incorporated into it. Thermodynamic parameters of the solubilization process with responsive polymer network were calculated using the same approximations as in the micellar solubilization with Pluronic polyols. See, Saito, Y., Kondo, Y., Abe, M., Sato, T., Chem.Pharm.Bull., 1994, 42, 1348. Namely, partition coefficient P was estimated from equilibrium solubilities of estradiol in responsive polymer network and water:

$$P = S_{SH}/S_w \quad (13)$$

by extrapolating the solubility plots of the steroid in Figure 22 to 100 % responsive polymer network. Using P values obtained from data in Figure 23, we calculated the

standard free energy change (ΔG), standard enthalpy of solubilization (ΔH), and standard entropy of solubilization (ΔS) using the following expressions:

$$\Delta G = -RT \ln P; \Delta H = -R \Delta \ln P / \Delta(1/T); \Delta S = (\Delta H - \Delta G)/T \quad (14)$$

Thermodynamic parameters obtained along with P values are given in Table 13.

- 5 Apparent partition coefficients and thermodynamic parameters for solubilization of estradiol by responsive polymer network.

Table 13.

T, K	P=SSH/S	ΔG kJ/mol	ΔH kJ/mol	ΔS J/mol
277	490	-14.3	4.72	68.6
293	520	-15.2		52.0
310	660	-16.7		53.9
323	660	-17.4		54.0
333	660	-18.0		54.0

- 10 Negative ΔG values indicate spontaneous solubilization at all temperatures, whereas positive ΔH shows that the solubilization was endothermic, similar to the solubilization of estriol, as well as indomethacin, by the poloxamer. Notably, ΔS of solubilization was always positive, suggesting that the more ordered water molecules
- 20 surrounding hydrophobic estradiol molecules moved to the less ordered bulk phase when the estradiol was transferred to the hydrophobic core of PPG segments in responsive polymer network. The aggregation of the PPG segments at elevated temperatures provides not only temporary cross-linking in the gel, but also a thermodynamically "friendly" environment for the hydrophobic drugs. Indeed, one
- 25 can express the free energy of formation of the aggregate core-water interface in responsive polymer network as:

$$\Delta G = [\sigma P_w(1 - \phi) + \sigma W_D \phi](4\pi R^2/n) \quad (15)$$

- where σP_w and σW_D are the interfacial tensions between pure PPO polymer and water and between water and the drug, respectively; ϕ is the volume fraction of the drug
- 30 within PPO core; R is the effective radius of the core, and n is the aggregation number.

Equation (3) shows that solubilization of a hydrophobic drug of high σ_{WD} should increase the stability of the aggregate. The solubilization process was found to decrease the critical micellization concentration and substantially increase the micellar core radius in Pluronic surfactants (Hurter, P.N. *et al.*, "In Solubilization in Surfactant Aggregates", Christian, S.D., Ed., Marcel Dekker, New York, 1995). A similar trend is indicated by the lowering the onset of gelation of the responsive polymer network upon solubilization of fluorescein (LogP 2.1) (Figure 24). The solubilization of hydrophobic drugs by responsive polymer network, analogous to the micellar solubilization of drugs by poloxamer, suggests that the responsive polymer network can be an effective vehicle in drug delivery.

Our *in vitro* study of hormone release from responsive polymer network shows an increase in the initial transport rate with either decreasing total polymer concentration in the formulation or decreasing temperature (Figure 25). These effects are related to the changes in macroscopic viscosity of the responsive polymer network, which erodes more rapidly from the feed phase through the membrane into the receiver compartment as the viscosity decreases (Figure 26). The degree of the responsive polymer network erosion was measured by weighing hormone-loaded responsive polymer network before and after kinetic experiment.

Figure 27 shows that the relative amount of progesterone penetrating into the receiver phase decreased 4-fold with the increase of total polymer concentration, whereas the total relative amount of progesterone stayed almost constant as total polymer concentration in the responsive polymer network increased. This result shows the existence of two routes of transport of hydrophobic drugs in our model system. Firstly, the drug incorporated into aggregates within the responsive polymer network system can flow through the membrane along with the erosion of the responsive polymer network; secondly, the drug not associated with the responsive polymer network aggregates can diffuse out of the responsive polymer network in the feed phase. The second process should not be related to the viscosity of the responsive polymer network. Indeed, the dynamic light scattering experiment shows no dramatic change of diffusivity of poly(styrene) latex particles in the responsive polymer

network as temperature rises thereby increasing macroscopic viscosity more than 10-fold (Figure 28). This result indicates that the viscosity of the responsive polymer network is essentially unaffected on the microscopic scale.

5 Appendix A attached.

APPENDIX A

Cosmetic Bench Reference Function Definitions

- Abrasive:** abrades, smoothes, polishes
- Absorbent powder:** takes up liquids, sponge-like action
- Absorption base:** forms water-in-oil emulsions
- Acidulent:** acidifies, lowers pH, neutralizes alkalis
- Amphoteric:** capable of reacting chemically either as an acid or a base; amphoteric surfactants are compatible with anionic and cationic surfactants
- Analgesic:** relieves pain
- Antacid:** neutralizes stomach acidity
- Antibacterial:** destroys/inhibits the growth/reproduction of bacteria
- Anti-caking:** prevents or retards caking of powders; keeps powders free-flowing
- Anti-dandruff:** retards or eliminates dandruff
- Antifoam:** suppresses foam during mixing
- Anti-inflammatory:** reduces, suppresses, counteracts inflammation
- Anti-irritant:** reduces, suppresses or prevents irritation
- Antimicrobial:** destroys, inhibits or suppresses the growth of microorganisms
- Antioxidant:** inhibits oxidation and rancidity
- Antiperspirant:** reduces or inhibits perspiration
- Antipruritic:** reduces or prevents itching
- Antiseptic:** inhibits the growth of microorganisms on the skin or on living tissue
- Antistat:** reduces static by neutralizing electrical charge on a surface
- Astringent:** contracts organic tissue after application
- Binder:** promotes cohesion of powders
- Bleaching agent:** lightens color, oxidizing agent
- Botanical:** natural plant derivative
- Buffer:** helps maintain original pH (acidity or basicity) of a preparation
- Carrier:** a vehicle or base used for a preparation
- Chelate:** form a complex with trace-metal impurities, usually calcium or iron
- Colorant:** adds color, may be a soluble dye or an insoluble pigment
- Conditioner:** improves condition of skin and hair
- Coupling agent:** aids in solubilization or emulsification of incompatible components
- Decolorant:** removes color by adsorption, bleaching or oxidation
- Denaturant:** used to denature ethyl alcohol
- Dental powder:** powdered dentifrice
- Deodorant:** destroys, masks or inhibits formation of unpleasant odors
- Depilatory:** removes hair chemically
- Detergent:** a surface-active agent (surfactant) that cleans by emulsifying oils and suspends particulate soil
- Disinfectant:** destroys pathogenic microorganisms
- Dispersant:** promotes the formation and stabilization of a dispersion or suspension
- Dye stabilizer:** see Stabilizer
- Emollient:** softens, smoothes skin
- Emulsifier:** a surface-active agent (surfactant) that promotes the formation of water-in-oil or oil-in-water emulsions
- Enzymes:** complex proteins produced by living cells that catalyze biochemical reactions at body temperature
- Fiber:** strands of natural or synthetic polymers; for instance, cotton, wool, silk, nylon, polyester
- Film former:** solution of a polymer that forms films when the solvent evaporates after application to a surface
- Fixative:** fixes or sets perfumes; retards evaporation; promotes longer lasting aroma
- Flavor:** imparts a characteristic taste (and aroma) to edible foods and drinks; sometimes used in lip products
- Foam booster:** enhances quality and quantity of lather of shampoos
- Foamer:** a surface-active agent (surfactant) that produces foam; an emulsion of air-in-water
- Foam stabilizer:** see Foam booster
- Fungicide:** inhibits or destroys growth of fungi
- Gellant:** a gelling agent; forms gels; includes a wide variety of materials such as polymers, clays and soaps
- Glosser:** furnishes a surface luster or brightness; usually used in lip or hair products
- Hair colorant:** see Colorant
- Hair conditioner:** see Conditioner
- Hair dye:** imparts a new permanent or semi-permanent color to hair
- Hair-set polymer:** polymer and/or resins used to maintain desired hair shape
- Hair-set resin:** see Hair-set polymer
- Hair waving:** see Reducing agent and Neutralizer
- Humectant:** absorbs, holds and retains moisture
- Hydrotrope:** enhances water solubility
- Intermediate:** basic chemicals which are chemically modified to obtain the desired function
- Lathering agent:** a surface active agent (surfactant) that forms a foam or lather on mixing with air in solution; see also Foamer
- Lubricant:** reduces friction, smoothes, adds slip
- Moisture barrier:** retards passage of moisture or water
- Moisturizer:** aids in increasing the moisture content of the skin through humectant or barrier action
- Neutralizer:** an oxidizing agent used in hair waving that stops the action of the reducing agent and re-establishes the disulfide linkages in hair
- Oil absorbent:** see Absorbent powder
- Ointment base:** an anhydrous mixture of oleaginous components used as a vehicle for medicaments
- Opacifier:** opacifies clear liquids or solids
- Oxidant:** oxidizing agent, neutralizes reducing agents, bleaching agent
- Pearlant:** imparts a pearlescent texture and luster
- Perfume solvent:** see Solvent and Solubilizer

Peroxide stabilizer: see Stabilizer

Pigment: a finely powdered insoluble substance used to impart color, luster or opacity

Plasticizer: plasticizes (makes more flexible) polymeric films or fibers

Polish: smoothes; adds gloss and luster

Polymer: a very high molecular weight compound consisting of repeating structural units

Powder: a solid in the form of fine particles

Preservative: protects products from spoilage by microorganisms

Propellant: pressurized gas in a container used to expel the contents when pressure is released by opening a valve

Protein: naturally occurring complex combinations of amino acids

Reducing agent: reduces a chemical compound usually by donating electrons; neutralizes oxidizing agents

Refatting agent: adds oils materials to the surface of substrates, e.g., skin and hair

Resin: nonvolatile solid or semisolid organic substances obtained from plants as exudates or prepared by polymerization of simple molecules

Sequestrant: forms coordination complexes with multivalent positive ions

Silicone: polymeric organic silicon compounds which are water resistant

Skin protectant: protects skin from environmental

Solubilizer: solubilizes, usually into aqueous vehicles, normally insoluble materials, such as fragrances, flavors, oils, etc.

Solvent: usually liquids capable of dissolving other substances

Stabilizer: added to stabilize emulsions and/or suspensions

Stimulant: produces a temporary increase in the functional activity of an organism or any of its parts

Surfactant (surface-active agent): lowers surface tension between two or more incompatible phases; soaps, detergents, wetting agents, solubilizing agents and emulsifying agents are typical surfactants; surfactants are classified as anionic, cationic, nonionic and amphoteric; anionic surfactants are negatively charged, cationic surfactants have no electrical charge

Suspending agent: keeps finely divided solid particles in suspension

Sweetener: sweetens to provide a more pleasant taste

Tanning accelerator: accelerates the tanning of skin

Thickener: thickens or increases viscosity/consistency

Thixotrope: the property of certain gels and emulsions of becoming more fluid or less viscous when shaken or stirred

UV absorber: used as a sunscreen and to protect preparations from degradation by UV radiation

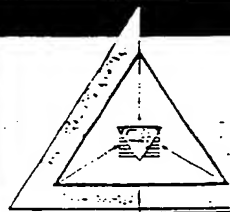
UVA absorber: absorbs in the range 320–400 nanometers (nm)

UVB absorber: absorbs in the range 290–320 nanometers (nm)

Wax: any of numerous substances of plant, animal or synthetic origin that contain principally esters of higher fatty acids and higher fatty alcohols; free fatty alcohols, fatty acids and hydrocarbons may also be present; waxes derived from petroleum products are mainly high-molecular-weight hydrocarbons

Wetting agent: a surface-active agent (surfactant) that lowers the surface and interfacial tension, facilitating the wetting of surfaces

From the Editors of *Cosmetics & Toiletries* magazine



Hair Care

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Ceramide — D. Braida et al

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African-American hair — A. Syed et al

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Functions

Abrasive

Adzuki beans
Almond (Prunus amygdalus) meal, shell granules
Aluminum silicate
Apricot (Prunus armeniaca) kernel powder, shells
Hydrated silica
Jojoba (Buxus chinensis) seed powder
Luffa cylindrica
Olive stone granules
Oyster shell powder
Peach (Prunus persica) pit powder
Peach (Prunus persica) stone granules
Polyethylene
Polyethylene HEC granules
Polyethylene oxidized, P. spheres
Polystyrene
Pumice
Rice (Oryza sativa) bran
Silica and S. colloidal
Sodium chloride
Walnut (Juglans regia) shell powder

Absorption base

1,2,6-Hexanetriol
Kaolin
Petrolatum
Rice (Oryza sativa) starch
Soy (Glycine soja) sterol
Zeolite

Absorbent powder

Corn (Zea mays) starch
Maltodextrin
Nylon-12
Oat (Avena sativa) bran, flour, meal
Zeolite

Acidulent

Acetic acid
Citric acid
Fumaric acid
Glutamic acid
Glycolic acid

Hydrochloric acid
Lactic acid
Nitric acid
Phosphoric acid
Sodium bisulfate
Sulfuric acid
Tartaric acid

AHA

Apple (Pyrus malus) extract
Apricot (Prunus armeniaca) kernel powder
Citric acid
Ethyl lactate
Glycolic acid
Lactic acid
Malic acid
Sodium lactate
Tartaric acid

Antiacne

Clays (white, yellow, red, green, pink)
Perfluorodecalin
Salicylic acid
Sulfur

Anti-aging

Basil (Ocimum basilicum) extract
Carrot (Daucus carota) extract
Catalpa kaempferia extract
Ceramide 33 (liquid soy extract)
Crataegus cuneata extract
Eugenia jambolana extract
Fomes fomentanus extract
Fomopsis pinicola extract
Ganoderma lucidum oil
Ginseng (Panax ginseng) extract
Hyaluronic acid
Hydrolyzed serum protein
Hydrolyzed soy flour
Isachne pulchella extract
Lactoferrin
Lady's Thistle (Silybum marianum) extract
Ligusticum jeholense extract

Manne collagen

Mushroom (Coniophora versicolor) extract
Musk rose (Rosa moschata) oil
Perfluorodecalin
Quaternium-51
Rubus thunbergii extract
Serum protein
Stenocalyx mucalii extract
Tricholoma matsutake extract

Antibacterial

Ammonium iodide
Chlorhexidine
Chlorhexidine diacetate, C. digluconate
Chlorhexidine dihydrochloride
Chlorphenesin
Hexamidine diisethionate
Hexidine
Iceland moss (Cetraria islandica) extract
Lactoferrin
Lauralkonium bromide, L. chloride
Laurammonium chloride
Laurylpyridinium chloride
Maunella armata extract
Mushroom (Cordyceps sabolifera) extract
Orange blossom extract
Orange (Citrus aurantium dulcis) peel extract
PEG-42 Ebrinko ceramides extract
Peppermint (Mentha piperita) extract
Phellodendron (Phellodendron amurense) extract
Pine (Pinus sylvestris) needle extract
Polymethoxy bicyclic oxazolidine
Quaternium 73
Rubus thunbergii extract
Tea tree (Melaleuca alternifolia) oil
Triclocarban
Undecylenic acid

Anticaking

Aluminum starch octenylsuccinate
Calcium stearate
Distarch phosphate
Hydrated silica

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Silica silylate
Sodium aluminum silicate
Zinc stearate

Anticaries agent

Cetylamine hydrofluoride
Olaflur
Sodium fluoride
Stearyl trihydroxyethyl propylenediamine dihydrofluoride

Anticellulite

Aminophylline
Bladderwrack (*Fucus vesiculosus*) extract
Butcherbroom (*Ruscus aculeatus*) extract
Carcinia cambogia extract
Fomes tomentosus extract
Fomistopsis pinicola extract
Ivy extract
Mushroom (*Coriolus versicolor*) extract
TEA-hydroiodide
Tricholoma matsutake extract

Antidandruff

Burdock (*Arctium lappa*) extract
Chloroxyleneol
Corydalis ambigua extract
Disodium undecylenamido MEA-sulfosuccinate
Ginger root extract
Iga edulis extract
Mauritiella armata extract
Myristalkonium saccharinate
PEG-6 undecylenate
Piroctone olamine
Resorcinol
Rosemary (*Rosmarinus officinalis*) extract
Sodium shale oil sulfonate
Stenocalyx micalii extract
Undecylenamide DEA
Willow (*Salix alba*) bark extract
Zinc pyrithione

Antifungal

Black walnut (*Juglans nigra*) extract
Coneflower (*Echinacea angustifolia*) extract
Orange blossom extract
Pfaffia paniculata extract

Anti-inflammatory

Allantoin polygalacturonic acid
Bisabolol
Black poplar (*Populus nigra*) extract
Brassica rapa-depressa extract
Butcherbroom (*Ruscus aculeatus*) extract
Calendula officinalis extract
Catalpa kaempferia extract
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chaparral (*Larrea mexicana*) extract
Coneflower (*Echinacea angustifolia*) extract
Cornflower (*Centaurea cyanus*) extract
Dipotassium glycyrrhizate
Eupatorium fortunei extract
Euphrasia officinalis extract
Ficus racemosa extract
Golden seal (*Hydrasium canadensis*) root extract
Guaiaculene
Horse chestnut (*Aesculus hippocastanum*) extract
Jujube (*Zizyphus jujuba*) extract
Laminaria japonica extract
Licorice (*Glycyrrhiza glabra*) extract
Ligusticum jeholense, L. lucidum extract
Matricaria (*Chamomilla recutita*) extract
Melaleuca uncinata extract
Melia azadirachta extract

Mulberry (*Morus nigra*) extract
Niacinamide ascorbate
Orange (*Citrus aurantium dulcis*) peel extract
Orange blossom extract
Palmetto extract
Palmitoyl collagen amino acids
Passion flower (*Passiflora laurifolia*) fruit extract
Paulownia imperialis extract
Salicylic acid
Shea butter (*Butyrospermum parkii*)
Sodium carboxymethyl beta-glucan
Soy (*Glycine soja*) protein
Stearyl glycyrrhetinate
Stenocalyx micalii extract
Tocopheryl acetate, T. nicotinate
Trichomonas japonica extract
Willow (*Salix alba*) extract
Witch hazel (*Hamamelis virginiana*) extract
Withania somniferum extract
Yarrow (*Achillea millefolium*) extract
Zinc lactate

Anti-irritant

Acetyl monoethanolamine
Allantoin
Allantoin acetyl methionine, A. glycyrrhetinic acid
Azelaic acid
Betaine
Calendula officinalis extract
Cocamidopropyl betaine
Coceth-7 carboxylic acid
Cornflower (*Centaurea cyanus*) extract
Disostearyl dimer diisoleate
Dipalmitoyl cystine
Green tea extract
Hydrolyzed sweet almond protein
Hydroxypropyltrimonium gelatin
Lauryl collagen amino acids
L-Lysine lauryl methionine
Mallow extract
Matricaria (*Chamomilla recutita*) extract
Palmitoyl hydrolyzed milk protein
Palmitoyl hydrolyzed wheat protein
Palmitoyl keratin amino acids
PEG-12 palm kernel glycerides
PEG-28 glyceryl tallowate
PEG-30 glyceryl monococoate
PEG-60 almond glycerides
PEG-78 glyceryl cocoate
PEG-82 glyceryl tallowate
PEG-200 glyceryl tallowate
Propionyl collagen amino acids
PVP
Saccharomyces lysate extract
Sodium C12-15 pareth-15 sulfonate
Sodium lauroamphoacetate
Soy (*Glycine soja*) protein
Undecylenoyl collagen amino acids
Valerian (*Valeriana officinalis*) extract

Antimicrobial

Benzalkonium chloride
Benzoic acid
Benzyl alcohol
Bromochlorophene
2-Bromo-2-nitropropane-1,3-diol
Butylparaben
Capryloyl collagen amino acids
Capryloyl glycine, C. keratin amino acids
Caplan
Cetethyldimonium bromide
Cetyl pyridinium chloride
Chlorothymol
Chloroxyleneol
Citron oil
Copper PCA
Dichlorobenzyl alcohol
Dilauryldimonium chloride

Domiphen Bromide
Ethylparaben
Eucalyptus (*Eucalyptus globulus*) extract
Fennel (*Foeniculum vulgare*) extract
Garlic (*Allium sativum*) extract
Glyceryl caprylate, G. laurate
Hexamidine diisethionate
Hinokitiol
Honeysuckle (*Lonicera caprifolium*) extract
Lichen (*Usnea barbata*) extract
Myristalkonium chloride
Pentylene glycol
Phenethyl alcohol
Phenol
Phenoxyethanol
Phenoxyisopropanol
Phenyl mercuric acetate, P.m. benzoate, P.m. borate
o-Phenylphenol
Polymethoxy bicyclic oxazolidine
Potassium sorbate
Propylparaben
Ricinoleamodopropyltrimonium ethosulfate
Sage (*Salvia officinalis*) extract
Sodium benzoate, S. pyrithione
Sodium ricinoleate, S. shale oil sulfonate
Thimerosal
Thyme (*Thymus vulgaris*) extract
Thymol
Triclocarban
Triclosan
Undecylenamidopropyltrimonium methosulfate
Undecylenic acid
Zinc oxide, Z. PCA
Zinc pyrithione, Z. undecylenate

Antioxidant

Ascorbic acid
A. polypeptide
Ascorbyl oleate, A. palmitate
Beta-carotene
BHA
BHT
t-Butyl hydroquinone
Dilauryl thiodipropionate
Dimyristyl thiodipropionate
Disodium EDTA
Distearyl thiodipropionate
Dodecyl gallate
EDTA
Erythorbic acid
Ferulic acid
Grape (*Vitis vinifera*) seed extract
Green tea extract
HEDTA
Hydroquinone
Hydroquinone-beta-D-glucopyranoside
p-Hydroxyanisole
Lactoferrin
Lysine PCA
Melanin
Methyl gallate
Niacinamide ascorbate
Nordihydroguaiaretic acid
Oat (*Avena sativa*) extract
Oryzanol
Pentasodium pentetate
Pentetic acid
Propyl gallate
Retinyl palmitate polypeptide
Rosemary (*Rosmarinus officinalis*) extract
Saccharomyces lysate extract
Sage (*Salvia officinalis*) extract
Sodium ascorbate, S. erythorbate
Sodium metabisulfite
Sodium selenate, S. sulfite
Superoxide dismutase
Tea (*Camellia sinensis*) extract
Tetrasodium EDTA
Tocopherol

Functions

Tocopheryl acetate, T. linoleate
Wild marjoram (*Origanum vulgare*) extract
Yeast (*Saccharomyces cerevisiae*) extract (Faex)

Antiperspirant

Allantoin-aluminum chlorohydrate
Aluminum capryloyl hydrolyzed collagen
Aluminum chlorohydrate-gly, A. chloride
Aluminum chlorohydrate, A. chlorohydrate
Aluminum PCA, A. sesquichlorohydrate
Aluminum undecylenoyl collagen amino acids
Aluminum zirconium pentachlorohydrate
Aluminum zirconium tetrachlorohydrate
Aluminum zirconium tetrachlorohydrate GLY
Aluminum zirconium trichlorohydrate
Aluminum-zirconium-glycine powder
Sage (*Salvia officinalis*) extract
Tomentil (*Potentilla erecta*) extract
Zirconium chlorohydrate

Antiseptic

Aluminum PCA
Azadirachta indica extract
2-Bromo-2-nitropropane-1,3-diol
Calendula amurensis extract
p-Chloro-m-cresol
Clove (*Eugenia caryophyllus*) oil
Crataegus cuneata extract
Dichlorobenzyl alcohol
Eniada phaseoloides extract
Eucalyptus (*Eucalyptus globulus*) extract
Golden seal (*Hydrastis canadensis*) root extract
Hexachlorophene
Melia australasica, M. azadirachta extract
Methyl salicylate
Orange (*Citrus aurantium dulcis*) peel extract
Oxyquinoline sulfate
Pfaffia paniculata extract
Potassium abietoyl hydrolyzed collagen
PVP-iodine
Silver nitrate
Sodium salicylate
Sierculia plataniolia extract
Tea tree (*Melaleuca alternifolia*) oil
Tomentil (*Potentilla erecta*) extract
Xanthozylium bungeanum extract

Antistat

Acetamide MEA
Acetamidopropyl trimonium chloride
6-(N-Acetylaminio)-4-oxyhexyltrimonium chloride
Alkyl dimethyl betaine
Babassuamidopropyl ammonium chloride
Behenamidopropyl ethyldimonium ethosulfate
Behenamidopropyl hydroxyethyl dimonium chloride
Carboxymethyl chitin
Cetethyl morpholinium ethosulfate
Cetrimonium chloride
Chitin
Chitosan
Cocamidopropyl ethyldimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed rice protein
Cocodimonium hydroxypropyl hydrolyzed soy protein
Dimethicone hydroxypropyl trimonium chloride
Dimethyl behenamine, D. cocamine
Dimethyl palmitamine, D. soyamine
Dimethyl tallowamine
Diolethylamidoethyl hydroxyethylmonium methosulfate
Dipalmitovlethyl hydroxyethylmonium methosulfate
N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride
Erucamidopropyl hydroxysultaine
Glycerol monopyroglutamate
Hydrogenated tallowamine oxide
Isostearamidopropyl dimethylamine

Lactamidopropyl trimonium chloride
Lauryldimonium hydroxypropyl hydrolyzed collagen
Linoleamidopropyl dimethylamine dimer dilinoleate
Olealkonium chloride
PEG-2 cocamine
PEG-2 cocomonium chloride
PEG-2 oleammonium chloride
PEG-8 caprylic/capric glycerides
PEG-10 cocamine
PEG-15 soyamine
PPG-9 diethylmonium chloride
PPG-25 diethylmonium chloride
PPG-40 diethylmonium chloride
Propylene glycol stearate
Quaternium-26, -27, -53, -62, -72
Rapeseedamidopropyl benzyldimonium chloride
Rapeseedamidopropyl epoxypopyl dimonium chloride
Silica, colloidal
Sorbitan caprylate
N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
Soyethyl morpholinium ethosulfate
Soyethylidimonium ethosulfate
Stearylalkonium chloride
Stearamidopropyl benzyl dimonium chloride
Stearamidopropyl ethyldimonium ethosulfate
Steartimonium chloride
N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
Wheat germamidopropyl ethyldimonium ethosulfate

Astringent

Aluminum citrate, A. lactate
Astragalus sinicus extract
Astrocaryum murumuru, A. nucuma extract
Azadirachta indica extract
Azelaamide MEA
Bearberry (*Arctostaphylos uva-ursi*) extract
Birch (*Betula alba*) leaf extract
Catalpa baccata extract
Celastrus paniculata extract
Coccinea indica extract
Coffee (*Coffea arabica*) bean extract
Euphrasia officinalis extract
Euterpe precatoria extract
Evening primrose (*Oenothera biennis*) extract
Gentian (*Gentiana lutea*) extract
Geranium maculatum extract
Grape (*Vitis vinifera*) leaf extract
Henna (*Lawsonia inermis*) extract
Hierochloa odorata extract
Honeysuckle (*Lonicera caprifolium*) extract
Hops (*Humulus lupulus*) extract
Horsetail extract
Hypocistis perforatum extract
Ivy extract
Juniperus communis extract
Kadsura heteriloca extract
Kola (*Cola acuminata*) extract
Lady's mantle (*Alchemilla vulgaris*) extract
Lemon (*Citrus medica limonum*) extract, peel extract
Lemon bioflavonoids extract
Lysimachia foenum-graecum extract
Magnolia spp. extract
Mauritia flexuosa extract
Maximiliana regia extract
Melaleuca uncinata, M. wilsonii extract
Melia australasica extract
Nettle (*Urtica dioica*) extract
Oak (*Quercus*) bark extract
Ocimum basilicum, O. sanctum extract
Palmetto extract
Passion flower (*Passiflora laurifolia*) fruit extract
Plantain (*Plantago major*) extract
Polygonum multiflorum extract
Pterocarpus marsipianus extract
Raspberry (*Rubus*) extract

Sambucus nigra oil
Sanguisorba root extract
Selenium spp. extract
Shorea robusta extract
Tannic acid
Walnut (*Juglans regia*) leaf extract, oil
Wheat (*Triticum vulgare*) protein
White nettle (*Lamium album*) extract
Witch hazel (*Hamamelis virginiana*) extract
Xanthozylium bungeanum extract
Zinc lactate
Ziziphus jujuba extract

Binder

Aluminum starch octenylsuccinate
Boron nitride
C20-40, C30-50, C40-60 alcohols
Calcium stearate
Cellulose gum
Dihydroabietyl behenate
Diisostearyl malate
Diocetyl sebacate
Distarch phosphate
Ethylcellulose
Gellan gum
Hydrogenated jojoba oil
Isocetyl alcohol, I. palmitate
Isopropyl isostearate
Isostearyl erucate, I. isostearate
Isostearyl neopentanoate
Maltodextrin
Methylcellulose
Microcrystalline cellulose
Octyl palmitate
Octyldodecyl myristate
bis-Octyldodecyl stearoyl dimer dilinoleate
Octyldodecyl stearoyl stearate
Oleyl oleate
PEG-20, -75, -150, -240, -350
Polydipentene
Polyethylene, P. micronized
PTFE
PVP
Sorbitol
Synthetic wax
Tapioca dextrin
Tridecyl behenate, T. neopentanoate
Tridecyl stearoyl stearate
Trisodium HEDTA

Biol. polymer

Distarch phosphate
Dog rose (*Rosa canina*) seed extract
Hydrogen peroxide
Kojic acid
Mulberry (*Morus nigra*) extract
Sanguisorba root extract

Botanical

Acacia
Acacia farnesiana extract
Agrimony (*Agrimonia eupatoria*) extract
Alder (*Alnus firma*) extract
Alfalfa (*Medicago sativa*) extract
Algae (*Ascomyllum nodosum*) extract
Algae (*Liobolium calcarum*) extract
Aloe barbadensis, A.B. extract
Aloe capensis extract
Alpine Veronica extract
Althea officinalis extract
Angelica archangelica extract
Anise (*Pimpinella anisum*) extract
Apple (*Pyrus malus*) extract
Apricot (*Prunus armeniaca*) extract
Arnica montana extract
Artemisia capillaris extract
Arnicheke (*Cynara scolymus*) extract
Asafetida (*Ferula assa foetida*) extract
Asiaticum sieboldi extract

Functions

- Asparagus officinalis extract
 Astragalus sinicus extract
 Avena (Geum rivale) extract
 Avocado (Persea gratissima) extract
 Balm mint (Melissa officinalis) extract, oil extract
 Banana (Musa sapientum) extract
 Barley (Hordeum vulgare) extract
 Basil (Ocimum basilicum) extract
 Bearberry (Arctostaphylos uva-ursi) extract
 Bee pollen extract
 Beet (Beta vulgaris) extract
 Betaglucan
 Bilberry (Vaccinium myrtillus) extract
 Bioflavonoids
 Birch (Betula alba) bark extract, leaf extract
 Birch (Betula platyphylla japonica) extract
 Bitter orange (Citrus aurantium amara) extract, flower extract, peel extract
 Black cohosh (Cimicifuga racemosa) extract
 Black currant (Ribes nigrum) extract
 Black henna extract
 Black poplar (Populus nigra) extract
 Black walnut (Juglans nigra) extract
 Bladderwrack (Fucus vesiculosus) extract
 Borage (Borago officinalis) extract
 Buckthorn (Frangula alnus) extract
 Burdock (Arctium lappa) extract
 Burdock (Arctium minus) root extract
 Bumel extract
 Butcherbroom (Ruscus aculeatus) extract
 Cabbage rose (Rosa centifolia) extract
 Calamus (Acorus calamus) extract
 Calendula officinalis extract
 Caper (Capparis spinosa) extract
 Capsicum frutescens extract, C.f. oleoresin
 Caraway (Carum carvi) extract
 Carageenan (Chondrus crispus)
 Carrot (Daucus carota) extract
 Carrot (Daucus carota sativa) oil
 Cassia auriculata extract
 Celadine (Chelidonium majus) extract
 Chamomile (Anthemis nobilis) extract, oil
 Chaparral (Larrea mexicana) extract
 Cherry (Prunus speciosa) leaf extract
 Cherry bark, C.b. extract
 Chestnut (Castanea sativa) extract
 Chinese hibiscus (Hibiscus rosa-sinensis) extract
 Chlorella vulgaris extract
 Cimicifuga foetida rhizome extract
 Cinchona succubifera extract
 Citroflavonoid, water soluble
 Citrus bioflavonoid complex
 Clary extract
 Clove (Eugenia caryophyllus) extract
 Clover (Trifolium pratense) extract
 Cnidium officinale rhizome extract, C.O. water
 Coffee (Coffea arabica) bean extract
 Colloidal oatmeal
 Coltsfoot (Tussilago farfara) leaf extract
 Comfrey (Symphytum officinale) leaf extract
 Condurango extract
 Coneflower (Echinacea angustifolia) extract
 Corallina officinalis
 Corchorus olitorius extract
 Conander (Conandrum sativum) extract
 Corn (Zea mays) cob powder, silk extract
 Corn poppy (Papaver rhoeas) extract
 Cornflower (Centaurea cyanus) extract
 Couch (Agropyron repens) grass
 Craetagus monogina extract
 Crithmum maritimum extract
 Cucumber (Cucumis sativus) extract
 Cypress (Cupressus sempervirens) extract
 Dandelion (Taraxacum officinale) extract
 Date (Phoenix dactylifera) extract
 Dead Sea Mud, Sults
 Dog rose (Rosa canina) hips extract
 Dyer's broom extract
 Eleuthero ginseng (Acanthopanax senticosus) extract
 Elm (Ulmus campestris) extract
 Eucalyptus (Eucalyptus globulus) extract
 Eucalyptus globulus oil
 Eucommia ulmoides extract
 Euphrasia officinalis extract
 Evening primrose (Oenothera biennis) extract, oil
 Everlasting (Helichrysum arenarium) extract
 Fennel (Foeniculum vulgare) extract
 Fenugreek extract
 Fermented rice (Oryza sativa) extract
 Fern (Dryopteris filix-Mas) extract
 Fig (Ficus carica) extract
 Fir needle extract
 Fumitory (Fumaria officinalis) extract
 Gardenia florida extract
 Garlic (Allium sativum) extract
 Gelidium cartilagineum
 Gentian (Gentiana lutea) extract
 Geranium maculatum extract
 Ginger root extract
 Ginkgo biloba extract
 Ginseng (Panax ginseng) extract
 Glycyrrhetic acid
 Glycyrrhizic acid
 Glycyrrhizin, ammoniated
 Golden seal (Hydrastis canadensis) root extract
 Goldthread (Coptis japonica) extract
 Gout kola extract
 Grape (Vitis vinifera) distillate, extract
 Grape (Vitis vinifera) leaf, seed extract
 Grape skin extract
 Grapefruit (Citrus grandis) peel extract
 Green bean (Phaseolus lunatus) extract
 Ground Ivy (Glechoma hederacea) extract
 Guarana (Paullinia cupana) extract
 Harpagophytum procumbens extract
 Hayflower extract
 Hazel (Corylus avellana) nut extract
 Henna (Lawsonia inermis) extract
 Hesperidin, H. methyl chalcone
 Hibiscus scaberrima extract
 Hibiscus synacus extract
 High beta-glucan barley flour
 Honeysuckle (Lonicera caprifolium) extract
 Honeysuckle (Lonicera japonica) leaf extract
 Hops (Humulus lupulus) extract
 Horse chestnut (Aesculus hippocastanum) extract
 Horseradish (Cochlearia armoracia) extract
 Horsetail extract
 Houttuynia cordata extract
 Hyacinth (Hyacinthus orientalis) extract
 Hydrocotyl (Centella asiatica) extract
 Hydrolyzed oat protein, soy flour
 Hypericum perforatum extract
 Hyssop (Hyssopus officinalis) extract
 Indian cress (Tropaeolum majus) extract
 Isodonis Japonicus extract
 Ivy extract
 Japanese angelica (Angelica acutiloba) extract, water
 Japanese hawthorn (Crataegus cuneata) extract
 Jasmine (Jasminum officinale) extract
 Job's tears (Coix lacryma-jobi) extract
 Jojoba (Buxus chinensis) seed powder
 Juniperus communis extract
 Kelp (Macrocystis pyrifera) extract
 Kiwi (Actinidia chinensis) fruit extract, seed oil
 Kola (Cola acuminata) extract
 Krameria triandra extract
 Lady's mantle (Alchemilla vulgaris) extract
 Lady's Thistle (Silvum marianum) extract
 Laurel (Laurus nobilis) extract
 Lavender (Lavandula angustifolia) extract, water
 Lemon (Citrus medica limonum) extract, juice extract, peel extract
 Lemon bioflavonoids extract
 Lemongrass (Cymbopogon schoenanthus) extract
 Leopard flower (Belamcanda chinensis) root extract
 Lettuce (Lactuca scariola sativa) extract
 Licorice (Glycyrrhiza glabra) extract
 Lilac (Syringa vulgaris) extract
 Linden (Tilia argentea) extract
 Linden (Tilia cordata) extract, water
 Loquat (Eriobotrya japonica) leaf extract
 Maidenhair fern extract
 Magnolia kobus extract
 Mallow extract
 Mandragora officinarum extract
 Mannan
 Marigold
 Marine silts
 Matricaria (Chamomilla recutita) extract
 Meadowsweet (Spiraea ulmaria) extract
 Melon (Cucumis melo) extract
 MEA iodine
 Mistletoe (Viscum album) extract
 Mugwort (Anemisia princeps) extract, water
 Mulberry (Morus alba) root extract
 Mulberry (Morus bombycis) root extract
 Mushroom extract
 Myrrh (Commiphora myrrha) extract
 Nasturtium extract
 Neroli extract
 Nettle (Urtica dioica) extract
 Oak (Quercus) bark extract
 Oak root extract
 Oat (Avena sativa) bran, bran extract, flour, protein
 Oat flower
 Olive (Olea europaea) extract, leaf extract
 Onion (Allium cepa) extract
 Orange blossom extract
 Orange (Citrus aurantium dulcis) flower extract, peel extract
 Pansy (Viola tricolor) extract
 Papaya (Carica papaya) extract
 Parsley (Carum petroselinum) extract
 Passion flower (Passiflora laurifolia) fruit extract
 Passionflower (Passiflora incarnata) extract
 Pea (Pisum sativum) extract
 Peach (Prunus persica) extract, leaf extract
 Pelargonium capitatum extract
 Pellitory (Parietaria officinalis) extract
 Pennyroyal (Mentha pulegium) extract
 Peony (Paeonia alba) extract
 Peony (Paeonia obovata) root extract
 Peppermint (Mentha piperita) extract, oil
 Perilla ocymoides extract
 Petiwinkle (Vinca minor) extract
 PEG-80 jojoba acid/alcohol
 PEG-120 jojoba acid/alcohol

CAMPO Siddha Herbs Extracts

Jothi-Pul (Glow-grass) Siddha Extract for High content bio-available
 Natural Radium for anti Kaposi Sarcoma Skin Treatment.
 Roma-Maram (Hairy Tree) Siddha Extract for ANTI-SENSE DNA
 Topical applications for HIV+ Lymph-nodes
 Siddha Extracts for post-Chemotherapy Skin-Damage Treatment



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Functions

Pfaffia paniculata extract
 Phellodendron amurense extract
 Phospholipids
 Pimento (Pimenta officinalis) extract
 Pine (Pinus sylvestris) cone, needle extract
 Pineapple (Ananas sativus) extract
 Plantain (Plantago major) extract
 Pollen extract
 Pongamol
 Pona Cocos extract
 Pueraria lobata extract
 Queen of the meadow extract
 Quillaja saponaria extract
 Quince (Pyrus cydonia) seed extract
 Quinoa (Chenopodium quinoa) extract
 Raspberry (Rubus) extract
 Rauwolfia (Serpentina) extract
 Red clover
 Rehmannia chinensis extract
 Restharrow (Ononis spinosa) extract
 Rhododendron chrysanthum extract
 Rhodophyceae extract
 Rhubarb (Rheum palmatum) extract
 Rice (Oryza sativa) bran extract
 Rice fatty acid
 Rose (Rosa multiflora) extract
 Rosemary (Rosmarinus officinalis) extract
 Rubia tinctorum extract
 Safflower (Carthamus tinctorius) extract
 Sage (Salvia officinalis) extract, water
 Sambucus nigra berry extract, extract
 Sandalwood (Santalum album) extract
 Sanguinaria canadensis extract
 Saponaria officinalis extract
 Sasa veitchii extract
 Saxifraga sarmatensis extract
 Scabiosa arvensis extract
 Scutellaria baicalensis root extract
 Silk extract
 Silver fir (Abies pectinata) extract
 Sisal (Agave rigida) extract
 Slippery elm extract
 Soapberry (Sapindus mukorossi) extract
 Sophora angustifolia extract
 Sophora flavescens root extract
 Sophora japonica extract
 Soybean (Glycine soja) extract
 Soy (Glycine soja) germ extract, protein, sterol
 Spearmint (Mentha viridis) extract, oil
 Spinach (Spinacia oleracea) extract
 Spiraea ulmaria extract
 Sunflower (Helianthus annuus) seed extract
 Sweet almond (Prunus amygdalus dulcis) extract
 Sweet cherry (Prunus avium) extract
 Sweet cicely (Anthriscus cerefolium) extract
 Sweet clover (Melilotus officinalis) extract
 Sweet violet (Viola odorata) extract
 Swertia chirata extract
 Tea (Camellia sinensis) extract
 Thistle (Chicus benedictus) extract
 Thyme (Thymus vulgaris) extract
 Tomato (Solanum lycopersicum) extract
 Tormentil (Potentilla erecta) extract
 Tuberosa (Polianthes tuberosa) extract
 Turmeric (Curcuma longa) extract
 Valerian (Valeriana officinalis) extract
 Walnut (Juglans regia) extract, leaf extract
 Water Lily (Nymphaea alba) root extract
 Watercress (Nasturtium officinale) extract

Wheat (Triticum vulgare) extract, protein
 Wheat (Triticum vulgare) germ extract
 Wheat bran lipids
 White ginger (Hedychium coronarium) extract
 White nettle (Lamium album) extract
 Wild agnemony (Potentilla anserina) extract
 Wild cherry (Prunus serotina) bark extract
 Wild indigo (Baptista tinctoria)
 Wild marjoram (Origanum vulgare) extract
 Willow (Salix alba) bark extract, extract
 Willow (Salix alba) leaf extract
 Witch hazel (Hamamelis virginiana) extract
 Yarrow (Achillea millefolium) extract
 Yeast (Saccharomyces cerevisiae) extract (Faex)
 Yucca vera extract
 Zanthoxylum piperitum extract
 Zedoary (Curcuma zedoaria) oil

Buffer

Ammonium carbonate, A. phosphate
 Calcium hydroxide, C. phosphate
 Citric acid
 Ethanolamine HCl
 Glycine
 Phosphoric acid
 Potassium phosphate
 Potassium sodium tartrate
 Sodium acetate, S. citrate
 Sodium lactate, S. phosphate
 Succinic acid
 Tromethamine

Carrier

Acrylates copolymer, sphenical powder
 Arginine
 Caprylic/capric triglyceride
 Caprylic/capric/laureic triglyceride
 Caprylic/capric/oleic triglyceride
 Caprylic/capric/oleic triglycerides
 Cetareth-20
 Coconut (Cocos nucifera) oil
 Cyclodextrin
 Dipropylene glycol
 Glyceryl caprylate, G. caprylate/caprate
 Hydrated silica
 Liposomes
 Magnesium silicate
 Methyl propanediol
 PEG-8/SMDI copolymer
 Potassium chloride
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propylene carbonate, P. glycol
 Serum albumin
 Sodium carboxymethyl beta-glucan
 Sodium chloride
 Sodium magnesium silicate
 Tapioca dextrin

Chelators

beta-Alanine diacetic acid
 Calcium disodium EDTA
 Disodium EDTA, -copper
 EDTA
 HEDTA
 Malic acid
 Monostearyl citrate
 Pentasodium pentetate
 Penetic acid

Phytic acid
 Potassium aspartate
 Sodium aspartate
 Sodium dihydroxyethylglycinate
 Sodium hexametaphosphate
 Tetrahydroxypropyl ethylenediamine
 Tetrasodium EDTA
 Tripotassium EDTA
 Trisodium EDTA, HEDTA

Cell stimulant

Aesculus chinensis extract
 Artemisia apiacea extract
 Astrocaryum muru. A. rucuma extract
 Baccharis gasipaes extract
 Borroja sorbilis extract
 Calendula amurensis extract
 Chrysanthemum monfolium extract
 Coccinea indica extract
 Comfrey (Symphytum officinale) leaf extract
 Condurango extract
 Dandelion (Taraxacum officinale) extract
 Echitea glauca extract
 Equisetum arvense extract
 Eucalyptus (Eucalyptus globulus) extract
 Euphotonium fortunei extract
 Euterpe precatoria extract
 Ficus racemosa extract
 Glycoproteins
 Hierochloa odorata extract
 Horse chestnut (Aesculia hippocastanum) extract
 Inga edulis extract
 Kadsura heteroloca extract
 Ligustrum lucidum extract
 Lysimachia foenum-graecum extract
 Mauntia flexosa extract
 Maximiliana regia extract
 Melaleuca bracteata, M. symphyocarp extract
 Nelumbium speciosum extract
 Ocimum basilicum extract, O. sanctum extract
 Paulownia imperialis extract
 Pfaffia spp. extract
 Pterocarpus marsupianus extract
 Rubus thunbergii extract
 Selinum spp. extract
 Shorea robusta extract
 Xanthoxylum bungeanum extract

Cleansing

Birch (Betula alba) leaf extract
 Lemongrass (Cymbopogon schoenanthus) extract
 Oat (Avena sativa) bran extract
 Passion flower (Passiflora laurifolia) fruit extract
 Witch hazel (Hamamelis virginiana) extract
 Yarrow (Achillea millefolium) extract

Conditioner

Acetamide MEA
 6-(N-Acetylamino)-L-oxyhexyltrimonium chloride
 Acrylamidopropyltrimonium chloride/acrylamide copolymer
 Adipic acid/dimethylaminohydroxypropyl diethylene triamine copolymer
 AMP-isostearoyl hydrolyzed wheat protein
 Apricot (Prunus armeniaca) kernel oil
 Behenalkonium chloride
 Behenamidopropyl dihydroxypropyl dimonium chloride
 Behenamidopropyl ethyldimonium ethosulfate
 Behenamidopropyl PG-dimonium chloride

CAMPO Siddha Herb Extracts
CAMPO Rainforest Herb Extracts & Oils
CAMPO Australasian Herbs & Tea Tree Extracts
CAMPO Chinese & Japanese Herb Extracts



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Functions

Behenamidopropyl dimethylamine behenate	Hydrolyzed sweet almond protein	Polymethacrylamidopropyl trimonium chloride
Behenamine oxide	Hydrolyzed wheat protein/PVP copolymer	Polyoxyethylene dihydroxypropyl linoleaminium chloride
Behenoyl PG-trimonium chloride	Hydrolyzed wheat protein polysiloxane polymer	Polyquaternium-2, -5, -6, -11, -16
Behenyl betaine	Hydroxyceryl hydroxyethyl dimonium chloride	Polyquaternium-17, -18, -24, -29, -44
Benzyltrimonium hydrolyzed collagen	Hydroxyproline	Potassium dimethicone copolyol panthenyl phosphate
Canolamidopropyl betaine	Hydroxypropyl chitosan	Potassium lauroyl collagen amino acids
Capramide DEA	Hydroxypropyl guar hydroxypropyltrimonium chloride	Potassium lauroyl hydrolyzed soy protein
Caprylic/capric/lauric triglyceride	Hydroxypropyl-bis-isostearylamidopropyl dimonium chloride	Potassium lauroyl wheat amino acids
Caprylyl pyrrolidone	Hydroxypropyl bis-stearyldimonium chloride	Potassium stearyl hydrolyzed collagen
Cassia auriculata extract	Hydroxypropyltrimonium gelatin	PPG-5 lanolin alcohol ether
Cetamine oxide	Hydroxypropyltrimonium hydrolyzed keratin	PPG-9 diethylmonium chloride
Cetearalkonium chloride	H.h. silk	PPG-20 lanolin alcohol ether
Chitosan PCA	Hydroxypropyltrimonium hydrolyzed wheat protein	Proline
Citric acid	Isopropyl hydroxybutyramide dimethicone copolyol	Propylene glycol stearate
Cocamidopropyl dimethylamine, C.d. lactate, C.d. propionate	Isopropyl lanolate	PVP/dimethiconylacrylate/polycarbonyl/polyglycol ester
Cocamidopropyl dimethylaminohydroxypropyl hydrolyzed collagen	Isostearamidopropyl betaine, I. dimethylamine	PVP/dimethylaminoethylmethacrylate copolymer
Cocamidopropyl dimonium	Isostearamidopropyl dimethylamine gluconate	PVP/dimethylaminoethylmethacrylate/polycarbonyl/polyglycol ester
Cocamidopropyl dimonium hydrolyzed collagen	Isostearamidopropyl dimethylamine glycolate	PVP/hydrolyzed wheat protein copolymer
Cocamidopropyl ethyldimonium ethosulfate	Isostearamidopropyl dimethylamine lactate	Quaternium-22, -26, -33, -61, -62, -70, -80
Cocamidopropyl PG-dimonium chloride, C.P.c. phosphate	Isostearamidopropyl ethyldimonium ethosulfate	Quaternium-76 hydrolyzed collagen
Coco-morpholine oxide	Isostearamidopropyl laurylacetodimonium chloride	Rapeseedamidopropyl benzyl dimonium chloride
Coco/oleamidopropyl betaine	Isostearamidopropyl morpholine, I.m. lactate	Rapeseedamidopropyl epoxypoly dimonium chloride
Cocodimonium hydroxypropyl hydrolyzed hair keratin	Isostearamidopropyl morpholine oxide	Rapeseedamidopropyl ethyldimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed rice protein	Isostearamidopropyl PG-dimonium chloride	Rice peptide
Cocodimonium hydroxypropyl hydrolyzed silk	Isostearaminopropyl dimonium chloride	Ricinoleamidopropyl-dimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Isostearyl hydrolyzed animal protein	Ricinoleamidopropyl betaine
Cocodimonium hydroxypropyl hydrolyzed soy protein	Isostearylamidopropyl dihydroxypropyl dimonium chloride	Ricinoleamidopropyl dimethylamine lactate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lactoglobulin	Ricinoleamidopropyl ethyldimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauramidopropyl dimethylamine	Ricinoleamidopropyl trimonium chloride
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauramidopropyl PG-dimonium chloride, I.P.c. phosphate	Ricinoleamidopropyl trimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauramine oxide	Silicone quaternium-3, -4
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauroampho PG-glycinate phosphate	Silk amino acids
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauroyl hydrolyzed collagen, L.h. elastin	Sodium/TEA-lauroyl collagen amino acids
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauroyl silk amino acids	Sodium/TEA-lauroyl hydrolyzed keratin
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauryl methyl gluceth-10 hydroxypropyl-dimonium chloride	Sodium/TEA-lauroyl keratin amino acids
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauryl phosphate, L. pyrrolidone	Sodium citrate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Lauryldimonium hydroxypropyl hydrolyzed collagen, keratin, soy protein	Sodium cocoyl hydrolyzed soy protein
Cocodimonium hydroxypropyl hydrolyzed soy protein	Linoleamidopropyl dimethylamine	Sodium hydrogenated tallow dimethyl glycinate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Milk amino acids	Sodium lauroyl collagen, keratin amino acids
Cocodimonium hydroxypropyl hydrolyzed soy protein	Milk protein (Lactis proteinum)	Sodium lauroyl wheat amino acids
Cocodimonium hydroxypropyl hydrolyzed soy protein	Myristalkonium chloride	Sodium stearoamphoacetate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Myristamidopropyl betaine, M. dimethylamine	Soluble keratin, wheat protein
Cocodimonium hydroxypropyl hydrolyzed soy protein	Myristonium bromide	Soyamide DEA
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oat (Avena sativa) protein	Soyamidopropyl benzyl dimonium chloride
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamide	Soyamidopropyl betaine, S. dimethylamine
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamidopropyl betaine, O. dimethylamine	Soyamidopropyl ethyldimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamidopropyl dimethylamine hydrolyzed collagen	Soyethyl morpholinium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamidopropylamine oxide	Soyethylmorpholinium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamine	Stearamide MEA
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleamine oxide	Stearamidodipropyl diethylamine, ethanolamine
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleoyl sarcosine	Stearamidodipropyl benzyl dimonium chloride
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleyl betaine	Stearamidodipropyl cetearyl dimonium tosylate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Oleyl dimethylamidopropyl ethonium ethosulfate	Stearamidodipropyl dimethylamine stearate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Palmitamidopropyl betaine	Stearamidodipropyl ethyldimonium ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Palmitamidopropyl dimethylamine	Stearamidodipropyl morpholine lactate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Palmitamine, P. oxide	Stearamidopropyl PG-dimonium chloride phosphate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Panthenyl hydroxypropyl steardimonium chloride	Stearamine oxide
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-2 milk solids	Steardimonium hydroxypropyl hydrolyzed collagen, keratin
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-2 oleammonium chloride	Steardimonium panthenol
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-3 lauramine oxide	Stearyl amidoethyl diethylamine
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-5 stearyl ammonium lactate	Steartimonium bromide
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-15 cocomonium chloride	Stearyl dimethicone
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-15 cocopolyamine	Tallowamidopropyl dimethylamine
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-15 tallowmonium chloride	Tetramethyl trihydroxy hexadecane
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-27	TEA-cocoyl hydrolyzed collagen
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-40	Trachea hydrolysate
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-85 lanolin	Tricetylmmonium chloride
Cocodimonium hydroxypropyl hydrolyzed soy protein	PEG-7000	Tridecyl salicylate
Cocodimonium hydroxypropyl hydrolyzed soy protein	Polydimethicone copolyol	Triethonium hydrolyzed collagen ethosulfate
Cocodimonium hydroxypropyl hydrolyzed soy protein		Wheat germamidopropyl dimethylamine lactate
Cocodimonium hydroxypropyl hydrolyzed soy protein		Wheat germamidopropyl dimethylamine lactate

Functions

Wheat germamidopropyl ethyldimonium
ethosulfate
Wheat peptide
Yeast powder, deproteinated

Coupling agent

Aceryl monoethanolamine
Buryloctanol
Myreth-3
Oleyl alcohol
PPG-10 butanediol
PPG-10 ceryl ether
PPG-10 oleyl ether
PPG-15 stearyl ether
PPG-22 butyl ether
PPG-23 oleyl ether
PPG-50 oleyl ether
Trideceth-7 carboxylic acid

Denaturant

Brucine sulfate
Denatonium benzoate, saccharide
Nicotine sulfate
Sucrose octaacetate
Thymol

Dental powder

Dicalcium phosphate
Silica
Sodium monofluorophosphate
Stannous fluoride

Deodorant

Abietic acid
Azadirachta indica extract
Chlorophyllin-copper complex
Eugenia jambolana extract
Farnesol
Fermented vegetable
Mauritia flexosa extract
Salvia multiorrhiza extract
Sodium aluminum chlorohydroxy lactate
Spondias amara extract
Triethyl citrate
Zinc phenol sulfonate, Z. ricinoleate

Depilatory

Barium sulfide
Beeswax, oxidized
Calcium thioglycolate
L-cysteine HCL
Potassium thioglycolate
Sodium thioglycolate
Thioglycerin

Detergent

Ammonium laureth sulfate
Ammonium lauryl sulfate
Capramide DEA
Cocamidopropyl dimethylamine lactate
Decyl glucoside
Decyltetradeceth-25
DEA lauryl sulfate
Diamyl sodium sulfosuccinate
Dicyclobexyl sodium sulfosuccinate
Diisobutyl sodium sulfosuccinate
Disodium caproamphodipropionate
Disodium caproamphodipropionate
Disodium capryloamphodipropionate
Disodium cetylal sulfosuccinate
Disodium cocamide MEA-sulfosuccinate
Disodium cocamide MIPA-sulfosuccinate
Disodium cocoamphodipropionate
Disodium deceth-6 sulfosuccinate
Disodium isodecyl sulfosuccinate
Disodium lauramide MEA-sulfosuccinate
Disodium lauramide PEG-2 sulfosuccinate
Disodium laureth sulfosuccinate

Disodium lauroamphodipropionate
Disodium lauroamphodipropionate
Disodium lauryl sulfosuccinate
Disodium myristamide MEA-sulfosuccinate
Disodium nonoxynol-10 sulfosuccinate
Disodium oleanamide PEG-2 sulfosuccinate
Disodium PEG-4 cocoamide MIPA-sulfosuccinate
Disodium ricinoleamide MEA-sulfosuccinate
Disodium tallowiminodipropionate
Dodecylbenzene sulfonic acid
Dodecylbenzene sulfonate
Dodecylbenzene sulfonate
Isopropylamine dodecylbenzenesulfonate
Isostearamidopropyl betaine
Isosteareth-6 carboxylic acid
Isostearamphodipropionate
Isostearyl hydroxyethyl imidazoline
Lauramidopropylamine oxide
Laureth-11
Lauroampho PG-glycinate phosphate
Lauryl glucoside, L. phosphate
Magnesium laureth sulfate, M. lauryl sulfate
Magnesium PEG-3 cocamide sulfate
MEA-dodecylbenzenesulfonate
MEA-laureth sulfate
MEA-lauryl sulfate
MIPA-lauryl sulfate
Myristamine oxide
Myristic acid
Nonoxynol-10
Oleoamphohydroxypropylsulfonate
Oleth-12, -15
Oleyl betaine
Palmitamidopropyl betaine
PEG-10 glyceryl stearate
PEG-15 glyceryl stearate
PEG-25 glyceryl isostearate
Potassium cocoyl hydrolyzed collagen
Sodium caproamphoacetate
Sodium cocoamphoacetate
Sodium cocoamphopropionate
Sodium cocomonoglycinate sulfate
Sodium cocoyl hydrolyzed soy protein
Sodium cocoyl isethionate
Sodium C12-15 pareth-25 sulfate
Sodium C14-16 olefin sulfonate
Sodium C14-17 alkyl seculfonate
Sodium deceth sulfate
Sodium decyl diphenyl ether sulfonate
Sodium dodecylbenzenesulfonate
Sodium dodecylidiphenyl ether sulfonate
Sodium iodate
Sodium laureth-2 sulfate
Sodium laureth-3 sulfate
Sodium laureth-7 sulfate
Sodium laureth-12 sulfate
Sodium laureth-13-carboxylate
Sodium laureth sulfate
Sodium lauriminodipropionate
Sodium lauroamphopropionate
Sodium lauroyl methyl alaninate
Sodium lauryl phosphate, S.I. sulfate
Sodium lauryl sulfacetate
Sodium methyl oleoyl taurate
Sodium methyl cocoyl taurate
Sodium methyl lauroyl taurate
Sodium methyl naphthalenesulfonate
Sodium myreth sulfate
Sodium myristyl sulfate
Sodium oeryl sulfate, oleyl sulfate
Sodium POE alkyl ether acetate
Sodium trideceth-7 carboxylate
Sodium trideceth sulfate
Sodium tridecyl sulfate
Steareth-11, -30
TEA-dodecylbenzenesulfonate
TEA-laureth sulfate
TEA-lauryl sulfate
TEA-palm kernel sarcosinate

TEA-PEG-3 cocamide sulfate
Undecylenamidopropyl betaine

Disinfectant

Benzalkonium chloride
Chlorophene
Didecyldimonium chloride
Myristalkonium saccharinate
Shikonia
Sodium capryloamphoacetate
Tea tree (Melaleuca alternifolia) oil
p-Tertiaryphenol

Dispersant

Alkylated polyvinylpyrrolidone
C20-40, C30-50, C40-60 alcohols
Castor (Ricinus communis) oil
Ceteareth-20
Ceryl PPG-2 isodeceth-7 carboxylate
Cholesteryl/beheryl/ocryldodecyl lauroyl glutamate
Decaglycerol monodiolate
Diisocetyl dodecanedioate
Diisostearyl adipate
Dimethicone copolyol methyl ether
Diocryldodecyl dimer dilinoleate
Diocryldodecyl dodecanedioate
Ethyl hydroxymethyl oleyl oxazoline
Glyceryl caprylate, G. caprylate/caprate
Glyceryl diisostearate
Hydrogenated castor oil, H. lecithin
Hydrogenated tallow glycerides
Isobutylene/MA copolymer
Isocetyl alcohol
Isopropyl C12-15-pareth-9-carboxylate
Isostearyl neopenanoate
Lanolin acid
Laureth-4, -6, -16
Melanin
Nonoxynol-2, -18, -20, -30, -40
Octoxynol-5, -10
Octoxynol 16, 30, 40, 70
Ocryldodeceth-5
Ocryldodecyl/dimethicone copolyol citrate
Oleth-40
Oleyl alcohol
PEG-5 castor oil, glyceryl sesquiolate
PEG-6 beeswax
PEG-8/SMDI copolymer
PEG-9 castor oil, oleate, stearate
PEG-10 dioleate, stearamine
PEG-12 beeswax
PEG-12 glyceryl dioleate, laurate
PEG-15 castor oil
PEG-20 almond glycerides
PEG-20 glyceryl isostearate
PEG-20 sorbitan triisostearate
PEG-25 castor oil
PEG-30 dipolyhydroxystearate
PEG-40 hydrogenated castor oil PCA isostearate
PEG-60 shea butter glycerides
Poloxamer 101, 122, 181, 182, 184
Polyglyceryl-2 sesquiosostearate
Polyglyceryl-3 diisostearate, oleate
Polyglyceryl-5 distearate
Polyglyceryl-6 mixed fatty acids
Polyglyceryl-10 diisostearate, distearate
Polyglyceryl-10 decaoleate
Polyhydroxystearic acid
Polysorbate 40, 80
Potassium polyacrylate
PPG-3 PEG-6 oleyl ether
PPG-9 diethylmonium phosphate
PPG-12/SMDI Copolymer
PPG-15 stearyl ether
PPG-25, PPG-40 diethylmonium chloride
PPG-51/SMDI Copolymer
PVP/eicosene copolymer
PVP/hexadecene copolymer

Functions

Rapeseed oil, ethoxylated high erucic acid
 Ricinoleyl alcohol
 Sodium ceteth-13-carboxylate
 Sodium lignosulfonate, S. polymethacrylate
 Sodium polynaphthalenesulfonate
 Sorbitan oleate
 Steareth-10
 Tricontanyl PVP
 Triisostearyl PEG-6 esters
 Trioctyldodecyl citrate

Emollient

Acetylated glycol stearate
 Acetylated hydrogenated lanolin
 Acetylated hydrogenated lard glycende
 Acetylated hydrogenated vegetable glycende
 Acetylated lanolin, A.I. alcohol
 Acetylated lard glycende
 Acetylated monoglycerides
 Acetylated palm kernel glycerides
 Aleurites moluccana ethyl ester
 Allantoin
 Aluminum/magnesium hydroxide stearate
 AMP-isostearyl hydrolyzed soy protein
 Apricot (Prunus armeniaca) kernel oil
 Arachidyl behenate
 Argania spinosa oil
 Avocado (Persea gratissima) oil, unsaponifiables
 Avocado oil ethyl ester
 Babassu (Orbignya oleifera) oil
 Baryl isostearate, B. stearate
 Behenamidopropyl dihydroxypropyl dimonium chloride
 Behenoxy dimethicone
 Behenyl alcohol, B. behenate
 Behenyl erucate, B. isostearate
 Benzyl laurate
 Bladderwrack (Fucus vesiculosus) extract
 Borage (Borago officinalis) seed oil
 Borageamidopropyl phosphatidyl PG-dimonium chloride
 Brain extract
 Brazil nut (Bertholletia excelsa) oil
 Butyl myristate, oleate, stearate
 Butyloctanol
 Butyloctyl oleate
 C12-13, C12-16, C14-15 alcohols
 C12-15 alcohols octanoate
 C12-15 alkyl benzoate
 di-C12-15 alkyl fumarate
 C12-15 alkyl lactate
 Camellia kissi oil
 Tea (Camellia sinensis) oil
 C10-30 cholesterol/lanosterol esters
 Canola oil
 Caprylic/capric triglycende
 Caprylic/capric triglycende PEG-4 esters
 Caprylic/capric/laure triglycende
 Caprylic/capric/linoleic triglycende
 Caprylic/capric/oleic triglycendes
 Caprylic/capric/stearic triglycende
 Caprylic/capric/succinic triglycende
 Capsicum frutescens oleoresin
 Carrot (Daucus carota sativa) oil
 Cashew (Anacardium occidentale) nut oil
 Castor (Ricinus communis) oil
 Cetearyl behenate, C. candelillate
 Cetearyl isononanoate, C. octanoate
 Cetearyl palmitate, C. stearate
 Ceteth-10
 Cetostearyl stearate
 Cetyl C12-15 parath-9 carboxylate
 Cetyl acetate, C. alcohol
 Cetyl esters, C. lactate
 Cetyl myristate, C. octanoate
 Cetyl oleate, C. palmitate
 Cetyl PPG-2 isodeceth-7 carboxylate
 Cetyl nonoleate, C. stearate

Cetyl stearyl octanoate
 Chia (Salvia hispanica) oil
 Cholesterol esters
 Cholesterol
 Cholesteryl/behenyl/octyldodecyl lauroyl glutamate
 Cholesteryl hydroxystearate
 Cholesteryl stearate
 Choleth-24
 C 18-70 Isoparaffin
 C10-18, C12-18 triglycendes
 C12-15 linear alcohols 2-ethylhexanoate
 Cocamidopropyl PG-dimonium chloride
 Cocoa (Theobroma cacao) butter
 Coco-caprylate/caprate
 Coco-rapeseedate
 Coconut (Cocos nucifera) oil
 Cocoyl hydrolyzed soy protein
 Collagen phthalate
 Colloidal oatmeal
 Comfrey (Symphytum officinale) leaf extract
 Corn (Zea mays) oil
 Corn poppy (Papaver rhoeas) extract
 Cottonseed (Gossypium) oil
 Cuttlefish extract
 Cyclomethicone
 Deceth-4 phosphate
 Decyl oleate
 Decyltetradecanol
 Dialkyldimethylpolysiloxane
 Dibutyl sebacate
 Dicapryl adipate
 Dicaprylyl ether, D. maleate
 Diethylene glycol diisononanoate
 Diethylene glycol dioctanoate
 bis-Diglyceryl/caprylate/caprate/isostearate/
 hydroxystearate/adipate
 bis-Diglyceryl/caprylate/caprate/isosteareth/
 stearate/hydroxystearate/adipate

Dihydroabetyl behenate
 Dihydroxyethyl tallowamine oleate
 Diisobutyl adipate
 Diisocetyl adipate, dodecanedioate
 Diisodecyl adipate
 Diisopropyl adipate, dimer dilinoleate
 Diisopropyl sebacate
 Diisostearyl trimethylolpropane siloxy silicate
 Diisostearyl adipate
 Diisostearyl dimer dilinoleate
 Diisostearyl fumarate, D. maleate
 Dilinoleic acid
 Dimethicone
 Dimethicone copolyol
 Dimethicone copolyol acetate, D.c. almondate
 Dimethicone copolyol isostearate, D.c. lactate
 Dimethicone copolyol methyl ether
 Dimethicone copolyol phthalate
 Dimethicone propylethylenediamine behenate
 Dimethiconol stearate
 Dimethyl lauramine oleate
 Dioctyl adipate
 Dioctyl dimer dilinoleate
 Dioctylcyclohexane
 Dioctyldodecyl dimer dilinoleate
 Dioctyldodecyl dodecanedioate
 Dioctyl malate, D. sebacate, succinate
 Dipentaerythritol fatty acid ester
 Dipentaerythryl hexacaprylate/hexacaprate
 Dipentaerythryl hexahydroxystearate/isostearate
 Distearyl dimethylamine dilinoleate
 Ditridecyl adipate
 Dog rose (Rosa canina) hips oil
 Egg (Ovum) yolk extract
 Emu (Dromiceus) oil
 Erucyl erucate
 Ethyl avocado
 Ethylhexyl isopalmitate

COSMETIC AND PHARMACEUTICAL INGREDIENTS

CAMPHOR USP
 CARBOXYMETHYLCELLULOSE USP
 CETINA (CETYL ESTERS & STEARAMIDE DEA)
 SPERMWAX® (CETYL ESTERS WAX)
 CHOLESTEROL NF
 DENATONIUM BENZOATE NF
 GLYCINE USP
 IPG (ISOPENTYLDIOL)
 MENTHOL USP
 ROBANE (SQUALANE NF)
 SUPRAENE® (SQUALENE)
 UREA PEROXIDE USP

ROBECO INC.

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OUR 78TH YEAR



Functions

2-Ethylhexyl isostearate	Isononyl isononanoate	Octyldodecanol
Ethyl linolenate, E. minkate	Isopenyldiol	Octyldodecyl behenate, O. benzoate
Ethyl morrhuate, E. myristate	Isopropyl avocadate	Octyldodecyl erucate, O. myristate
Ethyl oleate, E. olivate	Isopropyl C12-15-pareth-9-carboxylate	Octyldodecyl oleate, O. ricinoleate
Evening primrose (<i>Oenothera biennis</i>) extract, oil	Isopropyl isostearate	Octyldodecyl stearate
Glycereth-4.5-lactate	Isopropyl lanolate, I. linoleate	bis-Octyldodecyl stearoyl dimer dilinoleate
Glycereth-5 lactate	Isopropyl myristate, I. palmitate	Octyldodecyl stearoyl stearate
Glycereth-7 benzoate	Isopropyl PPG-2-isodeceth-7 carboxylate	Oleamine oxide
Glycereth-7 diisononanoate	Isopropyl stearate	Oleic/palmitoleic/linoleic glycerides
Glycereth-7 triacetate	Isosorbide laurate	Oleic alcohol
Glycereth-7 tricoanoate	Isostearic acid	Oleostearine
Glycereth-12, -26	Isostearyl alcohol	Oleyl alcohol, O. erucate, O. oleate
Glycerol tricaprylate/caprate	Isostearyl behenate, I. benzoate	Olive (<i>Olea europaea</i>) oil
Glyceryl adipate, G. dioleate	Isostearyl diglyceryl succinate	Orange (<i>Citrus aurantium dulcis</i>) peel wax
Glyceryl isostearate, G. lanolate	Isostearyl erucate, I. erucyl erucate	Orange roughly (<i>Hoplostethus atlanticus</i>) oil
Glyceryl linoleate, G. monopyroglutamate	Isostearyl isostearate, I. lactate	Palm (<i>Elaeis guineensis</i>) oil
Glyceryl myristate, G. oleate	Isostearyl malate, I. myristate	Palm kernel glycerides
Glyceryl ricinoleate	Isostearyl neopentanoate, palmitate	Palmitic acid
Glyceryl triacetyl hydroxystearate	Isostearyl stearoyl stearate	Panthenyl triacetate
Glyceryl triacetyl ricinoleate	Isostearylamidopropyl dihydroxypropyl dimonium chloride	Partially hydrogenated canola oil
Glycosaminoglycans	Isotridecyl isononanoate	Partially hydrogenated soybean oil
Glycosphingolipids	Isotridecyl myristate	Peach (<i>Prunus persica</i>) extract
Gold of Pleasure oil	Jojoba (<i>Buxus chinensis</i>) oil	Peanut (<i>Arachis hypogaea</i>) oil
Grape (<i>Vitis vinifera</i>) seed oil	Jojoba butter, J. esters	Pecan (<i>Carpa illinoensis</i>) oil
Hazel (<i>Corylus avellana</i>) nut oil	Jojoba oil, synthetic	PEG-2 diisononanoate, P. dioctanoate
Helianthus annuus ethyl ester	Kukui (<i>Aleurites moluccana</i>) nut oil	PEG-2 milk solids
Hexadecyl isopalmitate	Lactamide DGA	PEG-4
Hexamethyldisiloxane	Laneth-10 acetate	PEG-4 diheptanoate, P. dilaurate
Hexyl laurate	Lanolin, L. acid	PEG-5 C8-12 alcohols citrate
Hexyldecanol	Lanolin alcohol, L. oil	PEG-5 C14-18 alcohols citrate
Hexyldecanol stearate	Lanolin, ultra anhydrous	PEG-5 hydrogenated castor oil
Honey extract	Lanolin wax	PEG-5 hydrogenated castor oil triisostearate
Hybrid safflower (<i>Carthamus tinctorius</i>) oil	Lanosterol	PEG-6
Hybrid sunflower (<i>Helianthus annuus</i>) oil	Lard glyceride	PEG-6 capric/caprylic glycerides
Hydrogenated C6-14 olefin polymers	Laureth-2, -3	PEG-7 glyceryl cocoate
Hydrogenated castor oil	Laureth-2 acetate, L. benzoate	PEG-8
Hydrogenated castor oil laurate	Laureth-2-octanoate	PEG-8 dilaurate, P. dioleate
Hydrogenated coconut oil	Lauric/palmitic/oleic triglyceride	PEG-8/SMDI copolymer
Hydrogenated cottonseed oil	Lauryl behenate, L. lactate	PEG-9 stearyl stearate
Hydrogenated C12-18 triglycerides	Lauryl phosphate	PEG-10 stearyl stearate
Hydrogenated lanolin	Lauryl dimethylamine isostearate	PEG-12
Hydrogenated lanolin, distilled	Lesquerella fendleri oil	PEG-12 dioleate, P. palm kernel glycerides
Hydrogenated lecithin	Linoleic acid	PEG-15 cocamine oleate/phosphate
Hydrogenated milk lipids	Macadamia ternifolia nut oil	PEG-18
Hydrogenated mink oil	Maleated soybean oil	PEG-20
Hydrogenated palm kernel glycerides	Mango (<i>Mangifera indica</i>) oil, seed oil	PEG-20 hydrogenated castor oil isostearate
Hydrogenated palm oil	Mango kernel oil	PEG-20 hydrogenated castor oil triisostearate
Hydrogenated polyisobutene	Meadowtoam (<i>Limnathes alba</i>) seed oil	PEG-20 hydrogenated lanolin
Hydrogenated soybean oil	Menhaden (<i>Brevoortia tyrannus</i>) oil	PEG-24 hydrogenated lanolin
Hydrogenated starch hydrolysate	Methyl acetyl ricinoleate	PEG-25 PABA, P. propylene glycol stearate
Hydrogenated tallow glyceride	Methyl gluceth-20	PEG-40 glyceryl laurate
Hydrogenated tallow glyceride lactate	Methyl gluceth-20 benzoate, M. g. distearate	PEG-40 hydrogenated castor oil isostearate
Hydrogenated turtle oil	Methyl hydroxystearate, M. ricinoleate	PEG-40 hydrogenated castor oil laurate
Hydrogenated vegetable glycerides	Microcrystalline wax	PEG-40 hydrogenated castor oil triisostearate
Hydrogenated vegetable oil	Mineral oil (<i>Paraffinum liquidum</i>)	PEG-40 jojoba oil
Hydrolyzed collagen	Mink oil	PEG-50 hydrogenated castor oil laurate
Hydrolyzed conchiorin protein	Musk rose (<i>Rosa moschata</i>) oil	PEG-50 hydrogenated castor oil triisostearate
Hydrolyzed keratin	Myreth-3	PEG-60 shea butter glycerides
Hydrolyzed mushroom (<i>Tricholoma matsutake</i>) extract	Myreth-3 caprate, M. laurate	PEG-70 mango glycerides
Hydrolyzed oat protein	Myreth-3 myristate, M. octanoate	PEG-75
Hydroxylated lanolin	Myristyl alcohol, M. lactate	PEG-75 lanolin, P. shea butter glycerides
Hydroxylated milk glycerides	Myristyl myristate, M. octanoate	PEG-75 shea butter glycerides
Hydroxystearic acid	Myristyl propionate, M. stearate	PEG-150
Illipe butter	Neatsfoot oil	PEG/PPG-17/6 copolymer
Isobutyl palmitate, I. stearate	Necm (<i>Melia azadirachta</i>) seed oil	Pentaerythrityl dioleate
Isoceryl behenate, I. octanoate	Neopentyl glycol dicaprate	Pentaerythrityl isostearate/caprate/caprylate/adipate
Isoceryl palmitate, I. salicylate	Neopentyl glycol dicaprate/dicaprylate	Pentaerythrityl stearate
Isoceryl stearate	Neopentyl glycol diisooctanoate	Pentaerythrityl stearate/caprate/caprylate/adipate
Isodeceth-2 cocoate	Neopentyl glycol dioctanoate	Pentaerythrityl tetracaprylate/tetracaprate
Isodecyl citrate, I. cocoate	Oat (<i>Avena sativa</i>) bran extract, extract, flow	Pentaerythrityl tetraisononanoate, P. tetraisostearate
Isodecyl isononanoate, I. laurate	Octacosanyl stearate	Pentaerythrityl tetralaurate, P. tetraoctanoate
Isodecyl neopentanoate	Octyl cocoate	Pentaerythrityl tetraoleate, P. tetrapelargonate
Isodecyl octanoate, I. oleate	Octyl hydroxystearate, O. isononanoate	Pentaerythrityl tetrastearate
Isodecyl stearate	Octyl neopentanoate, O. octanoate	Perfluorodecalin
Isododecane	Octyl oleate, O. palmitate	Perfluoropolyethylisopropyl ether
Isocicosane	Octyl pelargonate, O. stearate	Petrolatum
Isohexadecane	Octyldodecanol	Phenethyl dimethicone
		Phenyl dimethicone, P. methicone, P. trimethicone

Functions

Phytantriol	PPG-8/SMDI copolymer	Propylene glycol myristyl ether acetate
Pistachio (Pistacia vera) nut oil	PPG-9	Propylene glycol stearate, SE
Placental enzymes	PPG-9-buteth-12	Pumpkin (Cucurbita pepo) seed oil
Pollen extract	PPG-9 butyl ether	Quinoa (Chenopodium quinoa) oil
Poloxamer 105 benzoate	PPG-10 butanediol, P. cetyl ether	Rapeseed (Brassica campestris) oil
Poloxamer 182 dibenzoate	PPG-10 methyl glucose ether	Rice (Oryza sativa) bran oil, bran wax
Polvbutene	PPG-10 oleyl ether	Rice fatty acid
Polvdecene	PPG-11 stearyl ether	Safflower (Carthamus tinctorius) oil
Polydimethicone copolyol	PPG-12-buteth-16	Salmon (Salmo) egg extract
Polyethylene glycol	PPG-12-PEG-50 lanolin	Sesame (Sesamum indicum) oil
Polyglyceryl-2 diisostearate, P. tetraisoostearate	PPG-12-PEG-65 lanolin oil	Shark liver oil
Polyglyceryl-2 trisostearate	PPG-12/SMDI Copolymer	Shea butter (Butyrospermum parkii)
Polyglyceryl-3 diisostearate, P. oleate	PPG-14 butyl ether	Shea butter (Butyrospermum parkii) extract
Polyglyceryl-3 stearate	PPG-15 butyl ether, P. stearyl ether	Shea butter, ethoxylated
Polyglyceryl-6 dioleate	PPG-15 stearyl ether benzoate	Shorea stenoptera butter
Polyglyceryl-10 decaoleate, P. decastearate	PPG-16 butyl ether	Silybum marianum ethyl ester
Polyglyceryl-10 tetraoleate	PPG-18 butyl ether	Sitostearyl acetate
Polyisobutene	PPG-20	Skin lipids
Polyisobutene:isohexapentacontahexane	PPG-20-buteth-30	Slippery elm extract
Polyisobutene:isooctahexacontane	PPG-20 cetyl ether	Sodium C8-16 isoalkylsuccinyl lactoglobulin sulfonate
Polyisobutene:isopentacontaoctane	PPG-24-glycereth-24	Sodium carboxymethyl beta-glucan
Polyisoprene	PPG-26	Sodium ceteth-13-carboxylate
Polyoxyethylene polyoxypropylene glycol	PPG-27 glyceryl ether	Sodium dimethicone copolyol acetyl methyl laurate
Polyquaternium-2	PPG-28-buteth-35	Sodium glyceryl oleate phosphate
Polysiloxane polyalkylene copolymer	PPG-30	Sodium hyaluronate, S. polymethacrylate
Polysorbate 40	PPG-30 cetyl ether	Sorbeth-20
Potassium dimethicone copolyol phosphate	PPG-40 butyl ether	Sorbitan isostearate, S. palmitate
PPG-2-buteth-3	PPG-50 cetyl ether, P. oleyl ether	Sorbitan sesquioleate, S. sesquisteate
PPG-2 lanolin alcohol ether	PPG-51/SMDI Copolymer	Sorbitan trioleate
PPG-2 myristyl ether propionate	PPG-53 butyl ether	Soybean (Glycine soja) oil
PPG-3 hydrogenated castor oil	Propylene glycol ceteth-3 acetate	Spermaceti
PPG-3 myristyl ether	Propylene glycol dicaprylate	Sphingolipids
PPG-5-buteth-7	Propylene glycol dicaprylate/dicaprate	Squalene
PPG-5-laureth-5	Propylene glycol diisostearate, P.g. dioctanoate	Stearamidopropyl cetearyl dimonium tosylate
PPG-5 butyl ether	Propylene glycol dipelargonate	Stearth-4 stearate
PPG-5 lanolin wax	Propylene glycol isoceteth-3 acetate	Stearic acid, S. hydrazide
PPG-5 pentaerythrityl ether	Propylene glycol isostearate, P.g. laurate	Stearoxy dimethicone
PPG-7-buteth-10	Propylene glycol myristate	

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VAN DYK

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Functions

Stearoxymethicone/dimethicone copolymer
 Stearyl behenate, S. benzoate
 Stearyl dimethicone, S. erucate
 Stearyl heptanoate, S. propionate
 Stearyl stearate
 Stearyl stearoyl stearate
 Sucrose cocoate
 Sunflower (Helianthus annuus) seed oil
 Sweet almond (Prunus amygdalus dulcis) oil
 Sweet cherry (Prunus avium) pit oil
 Synthetic jojoba oil
 Synthetic wax
 Tallow
 Tetradecylcyclosyl stearate
 Tocopheryl acetate
 Tricaprin
 Tricaprylin
 Tricaprylyl citrate
 Tricholoma matsutake extract
 Tridecyl behenate, T. cocoate
 Tridecyl erucate, T. neopentanoate
 Tridecyl octanoate, T. stearate
 Tridecyl stearoyl stearate
 Tridecyl trimellitate
 Trihexyldecyl citrate
 Trisocetyl citrate
 Trisostearin
 Trisostearyl citrate
 Trisostearyl trilinoleate
 Trilaurein
 Trilinolein
 Trimethylolpropane triacrylate/tricaprate
 Trimethylolpropane tri cocoate
 Trimethylolpropane tri laurate
 Trimyrstin
 Trioctanoin
 Trioctyl dodecyl citrate
 Triolein
 Tripalmitin
 Tripropylene glycol citrate
 Tristearin
 Trundecanoin
 Vegetable oil
 Walnut (Juglans regia) oil
 Wheat (Triticum vulgare) germ oil

Emulsifier

Acetylated hydrogenated lard glyceride
 Acetylated hydrogenated vegetable glyceride
 Acetylated monoglycerides
 Acrylates/C10-C30 alkyl acrylate crosspolymer
 Acrylates/vinyl isodecanoate crosspolymer
 Acrylic acid/acrylonitril copolymer
 2-Aminobutanol
 Ammonium acrylates/acrylonitril copolymer
 Arachidyl alcohol
 Beeswax
 Behenamidopropyl dihydroxypropyl dimonium chloride
 Beheneth-5 -10 -20 -30
 Behenic acid
 Behenyl betaine
 Borageamidopropyl phosphatidyl PG-dimonium chloride
 Butyloctanol
 C12-20 acid PEG-8 ester
 C18-36 acid
 Calcium dodecylbenzene sulfonate
 Calcium protein complex

Calcium stearate
 Calcium stearoyl lactylate
 Capramide DEA
 Caprylic/capric acid
 Caprylic/capric glycerides
 Castor oil, ethoxylated
 Cetalkonium chloride
 Cetareth-2 -4 -5 -6
 Cetareth-2 phosphate
 Cetareth-5 phosphate
 Cetareth-8 -10 -11 -12
 Cetareth-10 phosphate
 Cetareth-15 -17 -20 -25
 Cetareth-27 -29 -30 -34
 Cetearyl alcohol
 Cetearyl glucoside
 Ceteth-2 -4 -6 -10 -12 -13
 Ceteth-16 -20 -25 -30 -33
 Cetethyldimonium bromide
 Cetrimonium chloride
 Cetyl dimethicone copolyol
 Cetyl phosphate
 Cholesterol
 Choleth-10 -15 -24
 Cocamide DEA, C. MEA
 Cocamidopropyl dimethylamine
 Cocamidopropyl PG-dimonium chloride phosphate
 Cocamine
 Coceth-7 carboxylic acid
 Coconut acid
 Copper protein complex
 Cottonseed glyceride
 C12-13 pareth-3 -4 -9 -23
 C16-18 pareth-3 -5.5 -13 -19
 Cyclodextrin
 Decaglycerol monodiolate
 DEA-cetareth-2-phosphate
 DEA-cetyl phosphate
 DEA-cyclocarboxypropylolate
 DEA-oleth-3 phosphate
 DEA-oleth-5-phosphate
 DEA oleth-10 phosphate
 DEA-oleth-20-phosphate
 Dicetareth-10 phosphoric acid
 Diethanolamine
 Diethylaminoethyl stearate
 Diglyceryl stearate malate
 Dihydrocholeth-15 -20 -30
 Dihydrogenated tallow phthalic acid amide
 Dilauryl acetyl dimonium chloride
 Dilinoleamidopropyl dimethylamine dimethicone copolyol phosphate
 Dilinoleic acid
 Dimethicone copolyol almondate
 Dimethicone copolyol isostearate
 Dimethicone copolyol laurate
 Dimethicone copolyol methyl ether
 Dimethicone copolyol oliveate
 Dimethicone copolyol phthalate
 Dipalmitoylethyl hydroxyethylmonium methosulfate
 Dipropylene glycol
 Disodium hydrogenated cottonseed glyceride sulfosuccinate
 Disodium ricinoleamido MEA-sulfosuccinate
 Disodium stearyl sulfosuccinate
 Disodium sulfosuccinamide
 Distearyl phthalic acid amide

N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride
 Dodecylphenol-ethylene oxide condensate
 Egg (Ovum) yolk extract
 Emulsifying wax NF
 Ethoxylated fatty alcohol
 N-Ethylether-bis-1,4-(N-isostearylamidopropyl)-N,N-dimethyl ammonium chloride
 Ethyl hexanediol
 Euglena gracilis polysaccharide
 Glycereth-26 phosphate
 Glyceryl caprylate, G. caprylate/caprate
 Glyceryl citrate/lactate/linoleate/oleate
 Glyceryl cocoate, G. dilaurate
 Glyceryl dilaurate, G. dioleate
 Glyceryl distearate, G. hydroxystearate
 Glyceryl isostearate, G. lanolate
 Glyceryl laurate, G. linoleate
 Glyceryl mono-di-tri-caprylate
 Glyceryl myristate, G. oleate
 Glyceryl palmitate, G. ricinoleate
 Glyceryl ricinoleate SE
 Glyceryl stearate, G. stearate citrate
 Glyceryl stearate lactate
 Glyceryl stearate SE
 Glyceryl undecylenate
 Glycol distearate, G. oleate
 Glycol palmitate, G. stearate
 Glycol stearate SE
 Glycolamide stearate
 Glycosphingolipids
 Hydrogenated coco-glycerides
 Hydrogenated cottonseed glyceride
 Hydrogenated lanolin
 Hydrogenated lecithin
 Hydrogenated palm oil
 Hydrogenated soy glyceride
 Hydrogenated tallow glycerides
 Hydrogenated tallow glycerides citrate
 Hydroxycetyl phosphate
 Hydroxylated lanolin
 Hydroxylated lecithin
 Hydroxyoctacosanyl hydroxystearate
 Hydroxypropyl-bis-isostearylamidopropylidimonium chloride
 Isocetareth-8 stearate
 Isoceteth-10 stearate
 Isoceteth-20
 Isocetyl alcohol
 Isolaureth-6
 Isostearamidopropyl dimethylamine gluconate
 Isostearamidopropyl dimethylamine glycolate
 Isostearamidopropyl laurylacetodimonium chloride
 Isosteareth-2 -3 -10 -12 -20 -22 -30
 Isosteareth-2-octanoate
 Isosteareth-10 stearate
 Isosteane acid
 Isostearyl diglyceryl succinate
 Isostearylamidopropyl dihydroxypropyl dimonium chloride
 Karaya (Sterculia urens) gum
 Laneth-5 -10 -15 -16 -20 -40
 Laneth-10 acetate
 Lanolin
 Lanolin alcohol
 Lanolin, ultra anhydrous
 Lanolin wax
 Lauramide DEA, L. MEA

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Functions

Lauramidopropyl dimethylamine	PEG-5 lanolate, P. oleamine	PEG-20 lanolin, P. laurate
Lauramidopropyl PG-dimonium chloride	PEG-5 soy sterol, P. soyamine	PEG-20 oleate
Laureth-1 -2 -3 -4 -5	PEG-5 stearamine, P. stearate	PEG-20 methyl glucose sesquistearate
Laureth-2 octanoate	PEG-5 tallow amine	PEG-20 sorbitan beeswax
Laureth-3 phosphate	PEG-6 capric/caprylic glycerides	PEG-20 sorbitan isostearate
Laureth-4 carboxylic acid	PEG-6 cocamide	PEG-20 sorbitan trisostearate
Laureth-5 carboxylic acid	PEG-6 C12-14 ether	PEG-20 sorbitan trioleate
Laureth-6 -7 -9 -11 -12	PEG-6 dilaurate, P. dioleate	PEG-20 stearate, P. tallow amine
Laureth-11 carboxylic acid	PEG-6 distearate, P. isostearate	PEG-23 oleate, P. stearate
Laureth-16 -20 -23 -25 -30	PEG-6 lauramide, P. laurate	PEG-24 hydrogenated lanolin
Lauryl PCA	PEG-6 oleate, P. palmitate	PEG-25 castor oil
Laurylmethicone copolyol	PEG-6 sorbitan beeswax	PEG-25 phytosterol
Lecithin	PEG-6 sorbitan laurate	PEG-25 propylene glycol stearate
Linoleamidopropyl PG-dimonium chloride phosphate	PEG-6 sorbitan oleate	PEG-25 soy sterol, P. stearate
Lithium stearate	PEG-6 sorbitan stearate	PEG-29 castor oil
Magnesium sulfate hepta-hydrate	PEG-6 stearate	PEG-30 castor oil
Maleated soybean oil	PEG-6-32	PEG-30 dipolyhydroxystearate
Methoxy PEG-17/dodecyl glycol copolymer	PEG-6-32 stearate	PEG-30 glyceryl cocoate
Methyl gluceth-20 distearate	PEG-7 glyceryl cocoate	PEG-30 glyceryl isostearate
Methyl glucose dioleate, M. g. sesquiosstearate	PEG-7 hydrogenated castor oil	PEG-30 glyceryl laurate
Methyl glucose sesquistearate	PEG-7 oleate	PEG-30 glyceryl oleate
MEA-laureth sulfate	PEG-7.5 tallowamine	PEG-30 glyceryl stearate
Myreth-3 -4 -7	PEG-8	PEG-30 hydrogenated castor oil
Myreth-3 myristate	PEG-8 beeswax, P. castor oil	PEG-30 lanolin
Myristamidopropyl dimethylamine	PEG-8 C12-14 ether	PEG-30 sorbitan tetraoleate
Nonoxynol-1 -2 -4 -5 -6 -7	PEG-8 dilaurate, P. dioleate	PEG-32 dilaurate, P. dioleate
Nonoxynol-8 -9 -10 -11 -12 -13	PEG-8 distearate	PEG-32 distearate, P. laurate
Nonoxynol-14 -15 -18 -20 -30 -40 -50	PEG-8 glyceryl laurate	PEG-32 oleate, P. stearate
Nonyl nonoxynol-5 -10	PEG-8 laurate, P. oleate	PEG-33 castor oil
Oat (Avena sativa) flour	PEG-8, P. tallate	PEG-35 castor oil, P. stearate
Octoxynol-1 -3 -5 -8 -10	PEG-9 castor oil	PEG-40 castor oil
Octoxynol 16, 30, 40	PEG-9 diisostearate	PEG-40 glyceryl isostearate
2-Octyl dodecyl alcohol	PEG-9 dioleate, P. distearate	PEG-40 glyceryl laurate
Octyldodecanol	PEG-9 laurate, P. oleate	PEG-40 glyceryl trisostearate
Octyldodeceth-20 -25	PEG-9 stearate	PEG-40 hydrogenated castor oil
Oleamide DEA	PEG-10 castor oil, P. cocamine	PEG-40 hydrogenated castor oil PCA isostearate
Oleamidopropyl dimethylamine	PEG-10 coconut oil esters	PEG-40 sorbitan diisostearate
Oleamine oxide	PEG-10 C12-18 alcohols	PEG-40 sorbitan lanolate
Oleic acid	PEG-10 dioleate	PEG-40 sorbitan tetraoleate
Oleth-2 -3 -4 -5 -6 -7 -8 -9	PEG-10 glyceryl isostearate	PEG-40 stearate
Oleth-10 -12 -15 -20 -23	PEG-10 hydrogenated castor oil	PEG-40/dodecyl glycol copolymer
Oleth-25 -30 -40 -50	PEG-10 hydrogenated castor oil trisostearate	PEG-42 babassu glycerides
Oleth 13	PEG-10 lanolate	PEG-44 sorbitan laurate
Oleth-2 phosphate	PEG-10 polyglyceryl-2 laurate	PEG-45 palm kernel glycerides
Oleth-3 phosphate	PEG-10 sorbitan laurate	PEG-45 safflower glycerides
Oleth-5 phosphate	PEG-10 soy sterol, P. stearamine	PEG-50 lanolin, P. stearamine
Oleth-10 phosphate	PEG-10 stearate	PEG-50 stearate
Oleth-20 phosphate	PEG-11 babassu glycerides	PEG-60 almond glycerides
Palm acid	PEG-11 castor oil	PEG-60 castor oil
Palmitamidopropyl dimethylamine	PEG-12 dilaurate, P. dioleate	PEG-60 corn glycerides
Palmitic acid	PEG-12 distearate	PEG-60 glyceryl trisostearate
PEG-2 cocamine, P. distearate	PEG-12 glyceryl dioleate	PEG-60 hydrogenated castor oil
PEG-2 hydrogenated tallow amine	PEG-12 laurate, P. oleate	PEG-60 hydrogenated castor oil isostearate
PEG-2 laurate, P. laurate SE	PEG-12 stearate, P. tallate	PEG-60 hydrogenated castor oil trisostearate
PEG-2 oleamine, P. oleate	PEG-14 avocado glycerides	PEG-60 shea butter glycerides
PEG-2 soyamine, P. stearamine	PEG-15 castor oil	PEG-60 sorbitan tetraoleate
PEG-2 stearate, P. stearate SE	PEG-15 cocamine	PEG-70 mango glycerides
PEG-3 cocamide	PEG-15 glyceryl isostearate	PEG-75
PEG-3 C12-C18 alcohols	PEG-15 glyceryl laurate	PEG-75 castor oil, P. dilaurate
PEG-3 glyceryl isostearate	PEG-15 glyceryl ricinoleate	PEG-75 dioleate, P. distearate
PEG-3 glyceryl trisostearate	PEG-15 oleamine, P. oleate	PEG-75 lanolin, P. laurate
PEG-3 glyceryl trestearate	PEG-15, P. stearamine	PEG-75 oleate
PEG-3 lanolate, P. sorbitan oleate	PEG-15 tallow amine	PEG-75 shea butter glycerides
PEG-3 stearate	PEG-15 tallow polyamine	PEG-75 shorea butter glycerides
PEG-4 dioleate, P. diisostearate	PEG-16	PEG-75 stearate
PEG-4 dilaurate, P. distearate	PEG-16 hydrogenated castor oil	PEG-80 sorbitan laurate
PEG-4 glyceryl distearate	PEG-16 soy sterol	PEG-90 stearate
PEG-4 laurate, P. oleate	PEG-18 stearate	PEG-100 castor oil
PEG-4 stearate	PEG-20 almond glycerides	PEG-100 hydrogenated castor oil
PEG-4 stearyl stearate	PEG-20 castor oil, P. dilaurate	PEG-100 lanolin, P. stearate
PEG-4 tallate	PEG-20 dioleate, P. distearate	PEG-120 distearate
PEG-5 castor oil, P. cocamine	PEG-20 glyceryl laurate	PEG-150 dilaurate, P. dioleate
PEG-5 C12-C18 alcohols	PEG-20 glyceryl oleate	PEG-150 distearate, P. lanolin
PEG-5 glyceryl isostearate	PEG-20 glyceryl stearate	PEG-150 laurate, P. oleate
PEG-5 glyceryl sesquioleate	PEG-20 glyceryl trisostearate	PEG-150 stearate
PEG-5 glyceryl stearate	PEG-20 glyceryl tristearate	PEG-200 castor oil
PEG-5 glyceryl trisostearate	PEG-20 hydrogenated castor oil	PEG-200 glyceryl stearate
	PEG-20 hydrogenated lanolin	PEG-200 hydrogenated castor oil

Functions

PEG-200 laurate, P. oleate
 PEG-400 laurate
 Phosphate esters
 Phosphated amine oxides
 Phospholipids
 Poloxamer 101, 105, 122, 123, 124
 Poloxamer 181, 182, 184, 185, 235, 237
 Poloxamer 238, 334, 338, 407
 Polyglyceryl-2 oleate
 Polyglyceryl-2 polyhydroxystearate
 Polyglyceryl-2 sesquiossearate
 Polyglyceryl-2 stearate
 Polyglyceryl-2-PEG-4-distearate
 Polyglyceryl-2-PEG-4 stearate
 Polyglyceryl-3 diisostearate, P. dioleate
 Polyglyceryl-3 distearate
 Polyglyceryl-3 methylglucose distearate
 Polyglyceryl-3 oleate, P. polynicinoate
 Polyglyceryl-3 stearate
 Polyglyceryl-4 oleate, P. stearate
 Polyglyceryl-6 dioleate, P. distearate
 Polyglyceryl-6 laurate, P. myristate
 Polyglyceryl-6 oleate, P. polynicinoate
 Polyglyceryl-8 oleate
 Polyglyceryl-10 decaoleate
 Polyglyceryl-10 diisostearate
 Polyglyceryl-10 dioleate, P. dipalmitate
 Polyglyceryl-10 distearate, P. isostearate
 Polyglyceryl-10 laurate, P. linoleate
 Polyglyceryl-10 mixed fatty acids
 Polyglyceryl-10 myristate
 Polyglyceryl-10 oleate
 Polyglyceryl-10 pentaistearate
 Polyglyceryl-10 stearate
 Polyglyceryl-10 tetraoleate
 Polyglyceryl-10 trioleate
 Polyoxyethylene polyoxypropylene glycol
 Polyquaternium-5, -11
 Polysorbate 20, 21, 40, 60, 61
 Polysorbate 65, 80, 81, 85
 Potassium alginate, P. cetyl phosphate
 Potassium laurate, P. myristate
 Potassium tallowate
 PPG-1-PEG-9 lauryl glycol ether
 PPG-2-ceteareth-9
 PPG-3 isosteareth-9
 PPG-3 PEG-6 oleyl ether
 PPG-5-buteth-7
 PPG-5-ceteeth-20
 PPG-5-ceteeth-10 phosphate
 PPG-8 oleate
 PPG-10 cetyl ether phosphate
 PPG-12-PEG-50 lanolin
 PPG-15 stearyl ether
 PPG-24-buteth-27
 PPG-25 laureth-25
 PPG-26-buteth-26
 PPG-26 oleate
 PPG-36 oleate
 Propylene glycol alginate, P.g. dioleate
 Propylene glycol hydroxystearate
 Propylene glycol laurate, P.g. ricinoleate
 Propylene glycol ricinoleate SE
 Propylene glycol stearate
 Propylene glycol stearate, SE
 Quaternium-33
 Rapeseedamidopropyl ethyldimonium ethosulfate
 Rice (Oryza sativa) bran wax
 Ricinoleamide DEA
 Ricinoleic acid
 Saponins
 Selenium protein complex
 Silicone quaternium-5, -6
 Sodium acrylates/vinyl isodecanoate crosspolymer
 Sodium capryl lactylate
 Sodium carboxyl
 Sodium cetyl sulfate

Sodium C12-15 pareth-15 sulfonate
 Sodium isostearoyl lactylate
 Sodium laureth-17 carboxylate
 Sodium lauroyl lactylate
 Sodium lauryl sulfate
 Sodium nonoxynol-6 phosphate
 Sodium octyl sulfate
 Sodium oleate
 Sodium oleyl sulfate
 Sodium phosphate
 Sodium stearoyl lactylate
 Sorbeth-20
 Sorbitan isostearate, S. laurate
 Sorbitan oleate, S. palmitate
 Sorbitan sesquiossearate
 Sorbitan sesquioleate, S. sesquiossearate
 Sorbitan stearate, S. trisostearate
 Sorbitan trioleate, S. tristearate
 Soyamidopropyl dimethylamine
 Soyamine
 Stearamide DEA
 Stearamide DIBA-stearate
 Stearamidoethyl diethylamine
 Stearamidopropyl dimethylamine lactate
 Stearamidopropyl PG-dimonium chloride phosphate
 Stearamine
 Stearamine oxide
 Steareth-2, -4, -6, -7, -10, -11, -13
 Steareth-2 phosphate
 Steareth-15, -20, -21, -30, -100
 Stearic acid
 Sucrose cocoate, S. distearate
 Sucrose stearate
 Synthetic beeswax
 Tallow glycende, acetylated hydrogenated
 Tallowamide DEA

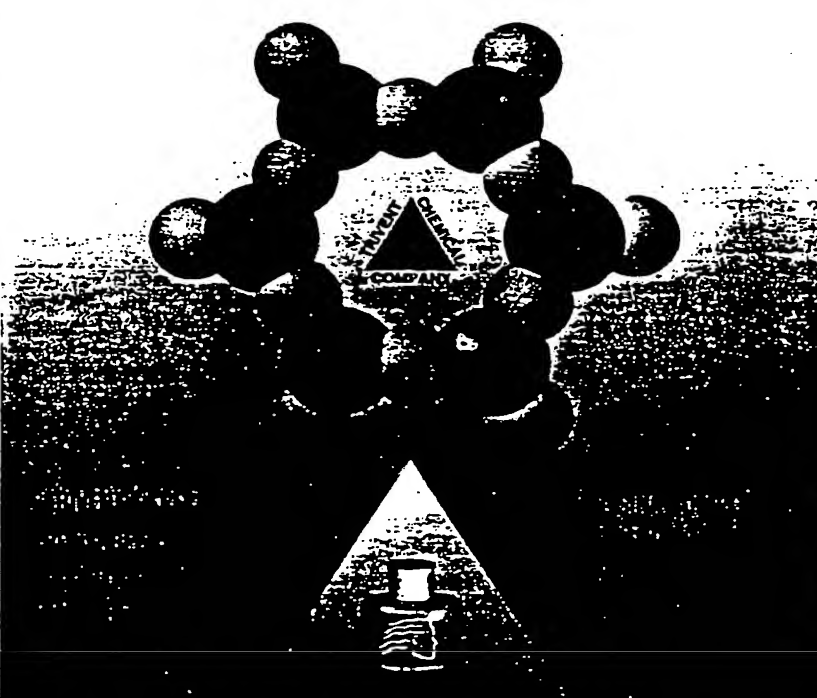
Tallowamidopropyl dimethylamine
 Talloweth-6
 Tetrasodium dicarboxyethyl stearyl sulfosuccinamide
 TEA-acrylates/acrylonitril copolymer
 Tissue extract
 Triceteareth-4 phosphate
 Trideceth-3, -5, -6, -7, -8
 Trideceth-9, -10, -12, -15
 Tridecyl ethoxylate
 Triethanolamine
 Trilaureth-4 phosphate
 Triolein
 Trisodium HEDTA
 Tristearin

Enzyme

Fermented vegetable
 Ganoderma lucidum oil
 Lipase
 Papain
 Soy (Glycine soja) protein
 Superoxide dismutase

Essential oil

Aesculus chinensis extract
 Artemisia apiacea extract
 Brassica rapa-depressa extract
 Caraway (Carum carvi) oil
 Cardamon (Elettaria cardamomum) oil
 Clove (Eugenia caryophyllus) oil
 Eclipta alba extract
 Eucalyptus globulus oil
 Eupatorium fortunei extract
 Euterpe precatoria extract
 Hierochloa odorata extract
 Kadsura heteroloca extract



Trivent Chemical Company, Inc.

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Functions

Ligustrum lucidum extract
 Lysimachia foenum-graecum extract
 Melaleuca bracteata extract
 Melaleuca hypericifolia extract
 Melaleuca symphyocarp extract
 Melaleuca uncinata extract
 Melaleuca wilsonii extract
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Paulownia impenalis extract
 Rosemary (Rosmarinus officinalis) oil
 Selinum spp. extract
 Trichomonas japonica extract
 Withania somniferum extract
 Yuzu oil
 Ziziphus jujuba extract

Exfoliant

Apricot (Prunus armeniaca) kernel powder
 Glycolic acid
 Jojoba (Buxus chinensis) seed powder
 Lactic acid
 Papain
 PEG-11-Avocado Glycerides
 Willow (Salix alba) bark extract

Fiber

Corn (Zea mays) cob powder
 Nylon-66
 Oat (Avena sativa) bran, meal
 Rayon

Film former

Acetylated lanolin
 Acrylates/hydroxyesters acrylates copolymer
 Acrylates/octylacrylamide copolymer
 Acrylates copolymer
 Alkylated polyvinylpyrrolidone
 Ammonium acrylates/acrylonitrile copolymer
 Betaglucon
 Bladderwrack (Fucus vesiculosus) extract
 Carboxymethylchitosan
 N,O-Carboxymethylchitosonium
 Chitosan lactate
 Collagen
 Collagen phthalate
 Colloidal oatmeal
 Desamido collagen
 Diisostearyl trimethylolpropane siloxy silicate
 DMHF
 Ethyl ester of hydrolyzed silk
 Ethylcellulose
 Gelatin
 Glycerin/diethylene glycol/adipate crosspolymer
 High beta-glucan barley flour
 Hydrolyzed collagen
 Hydrolyzed keratin
 Hydrolyzed oat protein
 Hydrolyzed pea protein
 Hydrolyzed reticulin
 Hydrolyzed RNA
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydrolyzed wheat protein
 Hydrolyzed wheat protein/dimethicone copolyol phosphate copolymer
 Hydrolyzed wheat protein/PVP copolymer
 Hydroxypropylcellulose
 Hydroxypropyltrimonium gelatin
 Jojoba (Buxus chinensis) oil
 Lactoglobulin
 Myristoyl hydrolyzed collagen
 Nitrocellulose
 Oat (Avena sativa) extract, protein
 Polyethylene, ionomer
 Polyquaternium-6, -7, -11, -22, -39
 Polyvinyl acetate, P. alcohol
 Procollagen

PVM/MA decadiene crosspolymer
 PVP/Dimethiconylacrylate/polycarbamyl/polyglycol ester
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/dimethylaminoethylmethacrylate/polycarbamyl/polyglycol ester
 PVP/eicosene copolymer
 PVP/hexadecene copolymer
 PVP/hydrolyzed wheat protein copolymer
 Rice peptide
 Sericin
 Shea butter (Butyrospermum parkii)
 Shellac
 Sodium C12-15 pareth-7 sulfonate
 Sodium hyaluronate
 Soluble collagen
 Soluble keratin
 Soluble wheat protein
 TEA-acrylates/acrylonitrile copolymer
 Tosylamide/epoxy resin
 Tricontanyl PVP
 Triethonium hydrolyzed collagen ethosulfate
 Wheat peptide

Fixative

Acrylates copolymer
 Adipic acid/dimethylaminohydroxypropyl diethylene triamine copolymer
 AMP-acrylates copolymer
 Hydrolyzed zein
 Methacryloyl ethyl betaine/acrylates copolymer
 Methyl rosinat
 Polyquaternium-4, -10, -29
 PPG-20 methyl glucose ether
 Sodium polystyrene sulfonate

Flavor (aroma)

Benzaldehyde
 Caraway (Carum carvi) oil
 Cardamon (Elettaria cardamomum) oil
 Cinnamon (Cinnamomum casia) oil
 Clove (Eugenia caryophyllus) oil
 Ethyl vanillin
 Eucalyptus globulus oil
 Flavor (aroma)
 Glutamic acid
 Glycyrrhetic acid
 Glycyrrhizic acid
 Glycyrrhizin, ammoniated
 Methyl salicylate
 Orange (Citrus aurantium dulcis) oil
 Peppermint (Mentha piperita) oil
 Rosemary (Rosmarinus officinalis) oil
 Sodium glycyrrhizinate
 Thymol
 Vanillin

Foam booster

Alkyldimethylamine oxide
 Babassuamidopropyl betaine
 Babassuamidopropylamine oxide
 Caprylyl pyrrolidone
 Carrageenan (Chondrus crispus)
 Cocamide DEA, C. MIPA
 Cocamidopropyl betaine
 Cocamidopropyl dimethylamine lactate
 Cocamidopropyl hydroxysultaine
 Coco-betaine
 Coco/oleamidopropyl betaine
 Cocoyl amido hydroxy sulfo betaine
 Cocoyl monoethanolamide ethoxylate
 DEA-hydrolyzed lecithin
 Dimethyl lauramine
 Disodium cocamido MEA-sulfosuccinate
 Disodium cocoamphodiacetate
 Disodium lauramido MEA-sulfosuccinate
 Disodium laureth sulfosuccinate
 Lauramide MIPA

Lauramidopropyl betaine
 Lauryl betaine
 Myristamidopropyl dimethylamine dimethicone copolyol phosphate
 Myristamine oxide
 Octyldodecyl benzoate
 Oleamide DEA, O. MIPA
 Oleyl betaine
 Palm kernelamide DEA
 PEG-3 lauramine oxide
 PPG-15 stearyl ether benzoate
 PEG-7000
 Sodium cocoamphoacetate
 Sodium cocoyl isethionate
 Sodium laureth sulfate
 Sodium lauroyl wheat amino acids
 Sodium octoxynol-2 ethane sulfonate
 Soyamidopropyl betaine
 Tallowamide MEA

Foam stabilizer

Babassuamidopropylamine oxide
 Behenamine oxide
 Caprylyl pyrrolidone
 Cetamine oxide
 Cocamide DEA, C. MEA, C. MIPA
 Cocamidopropyl betaine
 Cocamidopropyl hydroxysultaine
 Cocamidopropyl lauryl ether
 Cocamidopropylamine oxide
 Cocamine oxide
 Dihydroxyethyl C12-15 alkoxypropylamine oxide
 Dihydroxyethyl cocamine oxide
 Dihydroxyethyl tallowamine oxide
 Erucamidopropyl hydroxysultaine
 Hydroxypropyl methylcellulose
 Isostearamide DEA
 Lauramide DEA, L. MEA
 Lauramidopropylamine oxide
 Lauramine oxide
 Laureth-10
 Lauric-linoleic DEA
 Lauroyl-linoleoyl diethanolamide
 Lauroyl-myristoyl diethanolamide
 Lauryl pyrrolidone
 Linoleamide MEA
 Myristamide DEA, M. MEA
 Oleamide MEA
 Palmitamide MEA
 PEG-3 lauramide
 PEG-4 oleamide
 Ricinoleamide MEA
 Sesamide DEA
 Wheat germamide DEA

Foamer

Ammonium laureth sulfate
 Ammonium laureth-5 sulfate
 Ammonium laureth-12 sulfate
 Ammonium lauryl sulfate, A. I. sulfosuccinate
 Ammonium myreth sulfate
 Ammonium nonoxynol 4 sulfate
 Capryl caprylylglucoside
 Cetyl betaine
 Cocamide
 Cocamidopropyl dimethylamine
 Cocamidopropyl dimethylamine lactate
 DEA-laureth sulfate
 DEA-lauryl sulfate
 Decyl glucoside
 Disodium caproamphodiacetate
 Disodium caproamphodipropionate
 Disodium caprylamphodiacetate
 Disodium cocoamphodipropionate
 Disodium lauroamphodiacetate
 Disodium lauroamphodipropionate
 Disodium lauryl sulfosuccinate
 Disodium oleamide MEA-sulfosuccinate

Functions

Disodium oleamido MIPA-sulfosuccinate
 Disodium PEG-4 cocoamido MIPA-sulfosuccinate
 Isostearamidopropylamine oxide
 Lauryl glucoside
 Methyl gluceth-20
 MEA-laureth sulfate
 Mixed isopropanolamines myristate
 MIPA-lauryl sulfate
 PEG-80 sorbitan laurate
 PEG lauryl ether sulfate
 Potassium cocarate, P. lauryl sulfate
 Quillaja saponaria extract
 Sodium caproamphoacetate
 Sodium capryoamphoacetate
 Sodium capryoamphohydroxypropylsulfonate
 Sodium cocoamphoacetate
 Sodium cocoamphopropionate
 Sodium C12-15 pareth-25 sulfate
 Sodium C12-15 pareth-3 sulfonate
 Sodium C12-15 pareth-15 sulfonate
 Sodium C14-16 olefin sulfonate
 Sodium deceth sulfate
 Sodium laureth-2 sulfate
 Sodium laureth-3 sulfate
 Sodium laureth-7 sulfate
 Sodium lauraminodipropionate
 Sodium lauryl ether sulfosuccinate
 Sodium lauryl sulfate, S. I. sulfoacetate
 Sodium lauryl sulfosuccinate
 Sodium magnesium laureth sulfate
 Sodium myreth sulfate, S. myristyl sulfate
 Sodium trideceth sulfate
 Sodium tridecyl sulfate
 TEA-dodecylbenzenesulfonate
 TEA-laureth sulfate
 TEA-lauroyl collagen amino acids
 TEA-lauroyl keratin amino acids
 TEA-lauryl sulfate
 TEA-palm kernel sarcosinate
 Wheat germamidopropyl betaine
 Yucca vera extract

Fragrance

Chamaecyparis obtusa oil
 Orange (Citrus aurantium dulcis) oil
 Peppermint (Mentha piperita) oil
 Phenethyl alcohol

Fragrance solvent

Benzyl benzoate
 Diethyl phthalate
 Triaceun
 Triethyl citrate

Fungicide

Asrocaryum murumuru extract
 Azadirachta indica extract
 Captan
 Diiodomethyltolylsulfone
 Ficus racemosa extract
 Hexetidine
 Ligusticum jeholense extract
 Mauritia flexosa extract
 Melaleuca symphyocarp extract
 Melia australasica extract
 Melia azadirachta extract
 Mushroom (Cordyceps sabolifera) extract
 Mushroom (Coriolus versicolor) extract
 Sodium undecylenate
 Tea tree (Melaleuca alternifolia) oil
 Thiabendazole
 Undecylenamide MEA
 Zinc undecylenate
 Ziziphus jujuba extract

Gellant

Acrylic acid/acrylonitrogens copolymer
 Agar
 Algin

Aluminum distearate, A. tristearate
 Ammonium acrylates/acrylonitrogens copolymer
 Behenic acid
 Calcium alginate
 Carbomer
 Carboxymethylchitosan
 N,O-Carboxymethylchitosonium
 Carrageenan (Chondrus crispus)
 Ceresin
 Cetearyl candelillate
 Dibenzylidene sorbitol
 Ethylene/acrylic acid copolymer
 Ethylene/VA copolymer
 Gellan gum
 Hexanediol behenyl beeswax
 Hydrogenated jojoba oil
 Hydrogenated jojoba wax
 Hydroxystearic acid
 Jojoba wax
 Laneth-5, -15
 Montmorillonite
 Myreth-3-octanoate
 Octacosanyl stearate
 Oleth-3 phosphate
 Oleth-10 phosphate
 Poloxamer 105, 123, 124, 185, 235
 Poloxamer 237, 238, 338, 407
 Polyethylene
 Polyethylene, oxidized
 Polyquaternium-31
 Potassium alginate, P. chloride
 Sodium nonoxynol-6 phosphate
 Sodium tallowate
 Synthetic beeswax
 TEA-acrylates/acrylonitrogens copolymer
 Tribehenin

Glosser

C18-36 acid glycol ester
 Diphenyl dimethicone
 Methyl gluceth-10
 Octyldodecyl lactate
 Phenyl methicone, P. trimethicone
 Polyglyceryl-2 dioleate
 Polyisobutene
 Polyisobutene/isohexapentacontahexane
 Polyisobutene/isooctahexacontane
 Polymethacrylamidopropyltrimonium chloride
 PPG-10 methyl glucose ether
 PPG-36 oleate
 Tea (Camellia sinensis) oil
 Tribehenin

Hair care

Gentiana scabra extract
 Maidenhair fern extract
 Nicotinamide
 Nicotinic acid
 Paeonia lactiflora extract
 Watercress (Nasturtium officinale) extract

Hair conditioner

Amino bispropyl dimethicone
 Amodimethicone
 AMPD-isostearoyl hydrolyzed collagen
 Aqua Ichthammol
 Babassu (Orbignya oleifera) oil
 Babassuamidopropalkonium chloride
 Behenamidopropyl dimethylamine
 Behenamidopropyl hydroxyethyl dimonium chloride
 Behenitrimonium chloride
 Biotin
 Bishydroxyethyl biscetyl malonamide
 Borageamidopropyl phosphatidyl PG-dimonium chloride
 Brazil nut (Bertholletia excelsa) oil

Cetearyl trimonium methosulphate
 Cetrimonium bromide, C. chloride
 Cetyl pyridinium chloride
 Chia (Salvia hispanica) oil
 Chrysanthemum monifolium extract
 Cinchona succirubra extract
 Cocamidopropyl dimethylamine propionate
 Coccinea indica extract
 Cocodimonium hydroxypropyl hydrolyzed collagen
 Cocodimonium hydroxypropyl hydrolyzed keratin
 Cocodimonium hydroxypropyl silk amino acids
 Cocodimonium hydroxypropyl hydrolyzed wheat protein
 Cocodimonium hydroxypropyloxyethyl cellulose
 Cocotrimonium chloride
 Collagen amino acids
 Cyclomethicone
 L-cysteine HCL
 Dibehenyltrimonium methosulfate
 Dicitryldimonium chloride
 Dicoocodimonium chloride
 Dihydroxyethyl tallowamine oleate
 Dimethicone
 Dimethicone copolyol acetate, D. c. almondate
 Dimethicone copolyol amine
 Dimethicone copolyol bishydroxyethylamine
 Dimethicone copolyol isostearate, D. c. laurate
 Dimethicone copolyol olive
 Dimethicone hydroxypropyl trimonium chloride
 Dimethyl lauramine dimer dilinoleate
 Dioleylamidoethyl hydroxyethylmonium methosulfate
 Dipalmitoylethyl hydroxyethylmonium methosulfate
 Diphenyl dimethicone
 Diallowdimonium chloride
 N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride
 Entada phaseoloides extract
 Ethyl ester of hydrolyzed animal protein
 Gelatin
 Ginseng hydroxypropyltrimonium chloride
 butylene glycol
 Hematin
 Honey (Mel)
 Hydrolyzed collagen
 Hydrolyzed hair keratin
 Hydrolyzed vegetable protein
 Hydrolyzed wheat protein/dimethicone copolyol acetyl copolymer
 Hydrolyzed wheat protein hydroxypropyl polysiloxane
 Hydroxyethyl cetlyldimonium phosphate
 Hydroxypropyltrimonium hydrolyzed collagen
 Hydroxypropyl trimonium hydrolyzed wheat protein polysiloxane copolymer
 Hyssop (Hyssopus officinalis) extract
 Inga edulis extract
 Isostearamidopropylamine oxide
 Isostearoyl hydrolyzed collagen
 Keratin amino acids
 Kiwi (Actinidia chinensis) fruit extract
 Kola (Cola acuminata) extract
 Lamaria japonica extract
 Lauritrimonium chloride
 Lauryl hydroxypropyl trimonium polysiloxane copolymer
 Lauryldimethylamine isostearate
 Lauryldimonium hydroxypropyl hydrolyzed collagen
 Lauryldimonium hydroxypropyl hydrolyzed wheat protein
 Linoleamidopropyl dimethylamine dimer dilinoleate
 Linoleamidopropyl dimethylamine
 Lysimachia foenum-graecum extract
 Melaleuca hypericifolia extract
 Ocimum sanctum extract
 Olealkonium chloride

Functions

<p>Oleyl dimethylamidopropyl ethonium ethosulfate Palmitamidodecanediol Panthenyl ethyl ether Paulownia imperialis extract Peach (<i>Prunus persica</i>) leaf extract PEG-2 cocomonium chloride PEG-120 jojoba acid/alcohol PG-hydroxyethylcellulose lauryldimonium chloride PG-hydroxyethylcellulose cocodimonium chloride PG-hydroxyethylcellulose lauryldimonium chloride PG-hydroxyethylcellulose stearyldimonium chloride Phenyl trimethicone Phospholipids Phytantriol Polyoxyethylene polyoxypropylene glycol Polypropylene glycol Polyquaternium-4, -6, -7, -10 Polyquaternium-22, -28, -39 PPG-5-ceteih-10 phosphate Propyltrimonium hydrolyzed collagen Propyltrimonium hydrolyzed soy protein Propyltrimonium hydrolyzed wheat protein Quaternium-18, -75, -81, -82 Quaternium-79 hydrolyzed keratin Quaternium-79 hydrolyzed silk Sambucus nigra extract, oil Sesamidopropyl ammonium chloride Silicone quaternium-1, -8 Sodium cocoamphacetate Sodium cocoyl hydrolyzed collagen Sodium polystyrene sulfonate N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate Steapyrium chloride Stearyl ammonium chloride Stearamidopropyl dimethylamine Stearidimonium hydroxypropyl hydrolyzed wheat protein Steartrimonium chloride Steartrimonium hydroxyethyl hydrolyzed collagen N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate Stenocalyx micalii extract Sulfur Tallowbenzyl dimethylammonium chloride, hydrogenated Tallowtrimonium chloride Tea (<i>Camellia sinensis</i>) oil TEA-cocoyl hydrolyzed soy protein Thenoyl methionate Trimethylsilylamodimethicone Wheat amino acids</p> <p>Hair set resin polymer Acrylates/acrylamide copolymer Acrylates/PVP copolymer Acrylates/hydroxyesters acrylates copolymer Acrylates/octylacrylamide copolymer AMP-acrylates copolymer Butylester of PVM/MA copolymer Carboxylated vinylacetate terpolymer Diglycol/CHDM/isophthalates/SIP copolymer Eclipta alba extract Ethyl ester of PVM/MA copolymer Hydroxypropyl chitosan Isopropyl ester of PVM/MA copolymer Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer Polymethacrylamidopropyltrimonium chloride Polypropylene glycol oligosuccinate PVP PVP/dimethylaminoethylmethacrylate copolymer PVP/Polycarbonyl polyglycol ester PVP/VA copolymer PVP/VA-vinyl propionate copolymer Sodium polyacrylate</p>	<p>VA/butyl maleate/isobornyl acrylate copolymer VA/crotonates/vinyl neodecanoate copolymer VA/crotonates/vinyl propionate copolymer VA/crotonates copolymer Vinyl caprolactam/PVP/ dimethylaminoethylmethacrylate copolymer</p> <p>Hair sheen Maidenhair fern extract Tetradibutylpropyl methicone</p> <p>Hair waving Ammonium thioglycolate, A. thiolactate Argania spinosa oil L-cysteine HCL Cystine Diammonium dithiodiglycolate Dilauryl thiodipropionate Ethanolamine sulfite, E. thioglycolate Ethanolamine thiolactate Glyceryl thioglycolate Hydroxymethyl dioxazabicyclooctane Jojoba esters Monoethanolamine thiolactate Shea butter, ethoxylated Sodium thioglycolate Thioglycerin Thioglycolic acid Thiolactic acid</p> <p>Humectant Acetamide MEA Acetyl monoethanolamine 6-(N-Acetyl amino)-4-oxahexyltrimonium chloride Adenosine phosphate Ammonium lactate Atelocollagen Calcium panthothenate Calcium stearyl lactylate Carboxymethyl chitin Carboxymethyl chitosan succinamide Chitosan PCA Cholesteryl hydroxystearate Collagen amino-polysiloxane hydrolyzate Colloidal oatmeal Copper PCA methylsilanol Dimethicone copolyol laurate Dipotassium glycyrrhizinate Ethyl ester of hydrolyzed silk Fatty quaternary amine chloride complex Glucose glutamate Glycereth-4,5-lactate Glycereth-7, -12, -26 Glycerin Honey extract Hydrogenated passion fruit oil Hydrolyzed casein Hydrolyzed fibronectin Hydrolyzed glycosaminoglycans Hydrolyzed oat protein Hydrolyzed silk Hydrolyzed soy protein Hydroxypropyl chitosan Hydroxypropyltrimonium hydrolyzed casein Hydroxypropyltrimonium hydrolyzed silk Hydroxypropyltrimonium hydrolyzed soy protein Hydroxypropyltrimonium hydrolyzed wheat protein Keratin amino acids Lactamide DGA, MEA Lactamidopropyl trimonium chloride Lactic acid Lactose Lauroyl lysine Maltitol Mannitol Methyl gluceth-10, -20 Natto gum Oat (<i>Avena sativa</i>) extract, protein Panthenol</p>	<p>Panthenyl ethyl ether PCA PEG-4 Polyamino sugar condensate Potassium lactate Propylene glycol Propyltrimonium hydrolyzed collagen Propyltrimonium hydrolyzed soy protein Propyltrimonium hydrolyzed wheat protein Quaternium-22 Rice (<i>Oryza sativa</i>) germ oil Sea Salts (<i>Maris sal</i>) Shea butter (<i>Butyrospermum parkii</i>) Silk powder Sodium behenoyl lactylate Sodium caproyl lactylate Sodium cocoyl lactylate Sodium hyaluronate Sodium isostearoyl lactylate Sodium lactate, S. lauroyl lactylate, S. PCA Sodium polyglutamate Sodium stearyl lactylate Sorbitan laurate Sorbitan sesquiossearate Sorbitol Sphingolipids TEA-PCA Urea</p> <p>Hydrotrope Ammonium cumenesulfonate Ammonium xylenesulfonate Cetamine oxide Cocamidopropylamine oxide Lauramine oxide Potassium toluenesulfonate PPG-2-isodeceth-4, -6, -9, -12 Sodium cumene sulfonate Sodium laureth-13-carboxylate Sodium toluene sulfonate Sodium xylene sulfonate Trideceth-19-carboxylic acid</p> <p>Intermediate Caprylic acid Deceth-3 Diethyl succinate Dimethylaminopropylamine DM hydantoin Dodecylbenzene sulfonic acid Ethylene dichloride 4-Fluoro 3-nitro aniline Lauramine Methyl benzoate, M. cocoate Methyl isostearate, M. laurate Methyl myristate, M. palmitate Oleic acid Ricinoic acid Tall oil acid Tallow acid</p> <p>Lathering agent Ammonium cocoyl sarcosinate Ammonium C12-15 alkyl sulfate Ammonium lauroyl sarcosinate Cocamide MEA ethoxylate Cocamidopropyl dimethylaminohydroxypropyl hydrolyzed collagen Lauroyl sarcosine Myristoyl sarcosine Sodium cocoyl sarcosinate Sodium lauroyl sarcosinate Sodium methyl cocoyl taurate Sodium myristoyl sarcosinate TEA-cocoyl sarcosinate TEA-lauroyl sarcosinate</p> <p>Lubricant Aluminum salt octenyl succinate Amodimethicone</p>
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Functions

Boron nitride
Calcium aluminum borosilicate
Calcium stearate
Caprylic/capric triglyceride
Coceth-7 carboxylic acid
Coconut (Cocos nucifera) oil
Cyclomethicone
Diisodecyl adipate
Diisostearyl fumarate
Dimethicone copolyol
Glyceryl isostearate, G. oleate
Glyceryl polymethacrylate
Gold of Pleasure oil
Hyaluronic acid
Hydrogenated coconut oil
Hydrogenated cottonseed oil
Hydrogenated palm oil
Hydrogenated soybean/cottonseed oil
Hydrogenated soybean oil
Hydrogenated vegetable oil
Hydrolyzed oat flour
Hydroxypropyl guar
Isodecyl stearate
Isopropyl lanolate
Isostearyl diglyceryl succinate
Jojoba esters
Lanolin oil
Laureth-3 phosphate
Magnesium myristate, M. stearate
Mango (Mangifera indica) oil
Mineral oil (Paraffinum liquidum)
Mink oil
Monostearyl citrate
Neatsfoot oil
Oleostearine
Partially hydrogenated soybean oil
PEG-2 stearate
PEG-4 dilaureate
PEG-5M
PEG-9M
PEG-23M
PEG-27 lanolin
PEG-30 lanolin
PEG-40 lanolin, P. stearate
PEG-45M
PEG-90M
PEG-160M
PEG/PPG-17/6 copolymer
Pentaerythrityl tetrapelargonate
Petrolatum
Phenethyl dimethicone
Phenyl methicone
Polyacrylamidomethylpropane sulfonic acid
Polybutene
Polydimethicone copolyol
Polyglycerol ester of mixed vegetable fatty acids
Polymethylsilsequioxane
Potassium laurate, P. myristate
Potassium tallowate
PPG-2 myristyl ether propionate
PPG-3 myristyl ether
PPG-9-buteth-12
PPG-11 stearyl ether
PPG-12-buteth-16
PPG-12-PEG-50 lanolin
PPG-14 butyl ether
PPG-20 ceryl ether
PPG-20-buteth-30
PPG-24-buteth-27
PPG-28-buteth-35
PPG-36 oleate
PPG-40 butyl ether
Quaternium-79 hydrolyzed keratin
Quaternium-79 hydrolyzed silk
Rice (Oryza sativa) starch
Shea butter (Butyrospermum parkii) extract
Shorea stenoptera butter
Silica
Stearamide MEA, S. MEA-stearate
Stearoxytrimethylsilane

Stearyl dimethicone
Triisostearyl citrate
Triolein
Trisodium HEDTA
Triundecanoin
Zinc laurate, Z. stearate

Miscellaneous

Adhesion promoter—Glycerin/diethylene glycol/adipate crosspolymer
Analgesic—Glycol salicylate
Anesthetic—Benzocaine
Anti-elastic—Hydrolyzed Ulva lactuca extract
Anti-itching—Sodium shale oil sulfonate
Antiacid—Magnesium hydroxide, Magnesium silicate, Simethicone
Antifoam—Dimethicone silylate, Simethicone
Antilipase—Laminaria saccharina extract
Antipruritic—Coal tar
Antispasmodic—Garlic (Allium sativum) extract
Antiwrinkle—Chinese hibiscus (Hibiscus rosa-sinensis) extract
Barrier—Glycerin/diethylene glycol/adipate crosspolymer
Cell regeneration—Glycoproteins, Hydrolyzed Ulva lactuca extract
Co-emulsifier—Cholesteryl/beheryl/octyldodecyl lauroyl glutamate, Isododecane
Colloid—Gelatin
Cooling agent—Menthyl PCA, Menthone glycerin acetal
Detoxifier—Clover (Trifolium pratense) extract
Dye stabilizer—Uric acid
Filler—Mica
Fragrance stabilizer—2,2',4,4'-Tetrahydroxybenzophenone
Free radical scavenger—Melanin
IR filter—Corallina officinalis

Lanolin substitute—PEG-80 jojoba acid/alcohol
Lipolytic—Gelidium cartilagineum
Oxidant—Banum peroxide, Hydrogen peroxide, Urea peroxide
Oxygen carrier—Perfluorodecalin
Peroxide stabilizer—Phenacetin, Sodium stannate
Scalp stimulant—Birch (Betula alba) leaf extract
Sebostatic—Laminaria saccharina extract
Shine enhancer—Hydrolyzed wheat protein hydroxypropyl polysiloxane
Skin barrier lipid—Ceramide 3, N(2'-Stearyl-oxy-heptacosanoyl) phytosphingosine
Skin clarifier—Oat (Avena sativa) bran extract
Skin purifier—Birch (Betula alba) leaf extract
Substantivity—Dimethicone copolyol bishydroxyethylamine, Dimethicone hydroxypropyl trimonium chloride, Trimethylsilylamodimethicone
Sunless tanning—Acetyl tyrosine, Eclipta alba extract in white emulsion
Tonic—Kiwi (Actinidia chinensis) fruit extract, Matricaria (Chamomilla recutita) extract, Orange (Citrus aurantium dulcis) peel extract
Viscosity stabilizer—Diisodecyl adipate
Spreading agent—Stearyl heptanoate
Wound healing—Comfrey (Symphytum officinale) leaf extract
Waterproofing agent—PVP/eicosene copolymer, PVP/hexadecene copolymer, Tricontanyl PVP

Moisture barrier

Acrylates/octylarylamide copolymer
Betaglucon
C16-18 alkyl methicone
Cholesterol
Glycolipids
Isoeicosane

BERNEL

CHEMICAL COMPANY

Up to date, innovative technology for the cosmetic industry has been the driving force behind Bernel Chemical Company since its founding in 1982. Combining over 60 years of cosmetic expertise and marketing knowledge, we have introduced more than 20 raw materials for use by the cosmetic chemist.

Our product is innovation. Finding unique materials, such as MARRIX SF and CUPL® PIC, that contribute to the growth of our customers has established Bernel products worldwide.

BERNEL
CHEMICAL COMPANY

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Functions

Isohexadecane
 Lanosterol
 Octyl pelargonate, O. stearate
 Polyisobutene
 Polyisobutene/isohexapentacontahexane
 Polyisobutene/isooctahexacontane
 Silica silylate
 Trihydroxypalmitamidohydroxy propyl myristyl ether
 Trimethylsiloxyisilicate

Moisturizer

Acetamidopropyl trimonium chloride
 Adenosine triphosphate
 Aesculus chinensis extract
 Algae (Ascophyllum nodosum) extract
 Algae extract
 Aloe barbadensis, A. b. extract
 Ammonium lactate
 Amniotic fluid
 Apple (Pyrus malus) extract
 Apricot (Prunus armeniaca) kernel oil
 Arginine PCA
 Atelocollagen
 Artemisia apiacea extract
 Astrocaryum murumuru extract
 Avocado (Persea gratissima) extract, oil
 Avocado (Persea gratissima) unsaponifiables
 Babassu (Orbignya oleifera) oil
 Bactris gasipaes extract
 Benincasa hispida extract
 Betaglucan
 Betaine
 Borage (Borago officinalis) seed oil
 Brazil nut (Bertholletia excelsa) extract, oil
 C10-30 cholesterol/lanosterol esters
 Calcium pantothenate
 Calcium protein complex
 Caprylic/capric triglyceride
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/linoleic triglyceride
 Caprylic/capric/oleic triglycerides
 Cashew (Anacardium occidentale) nut oil
 Celastrol
 Celastrol extract
 Ceramide 33 (liquid soy extract)
 Chia (Salvia hispanica) oil
 Chinese hibiscus (Hibiscus rosa-sinensis) extract
 Chitin
 Chitosan, C. PCA
 Cholesterol esters
 Cholesterol
 Cholesteryl/behenehydroxydodecyl lauroyl glutamate
 Cocodimonium hydroxypropyl hydrolyzed collagen
 Cocodimonium hydroxypropyl hydrolyzed silk
 Cocodimonium hydroxypropyl hydrolyzed wheat protein
 Cocodimonium hydroxypropyl silk amino acids
 Collagen
 Collagen amino acids, C. phthalate
 Copper aspartate, C. protein complex
 Corn (Zea mays) oil
 Cottonseed (Gossypium) oil
 Crataegus cuneata extract
 Cucumber (Cucumis sativus) extract
 Desamido collagen
 Dicaprylyl maleate
 Diisocetyl dodecanedioate
 Diisostearyl adipate
 Dimethyl hyaluronate
 Dimethylsilanol hyaluronate
 Dioctyldodecyl dimer dilinoleate
 Dioctyldodecyl dodecanedioate
 Dipentaerythritol fatty acid ester
 Dog rose (Rosa canina) hips extract
 Dog rose (Rosa canina) seed extract
 Echitea glauca extract
 Elastin amino acids

Embillica officinalis extract
 Ethyl minkate
 Eugenia jambolana extract
 Evening primrose (Oenothera biennis) extract, oil
 Galla sinensis extract
 Ganoderma lucidum oil
 Ginseng (Panax ginseng) extract
 Gleditsia sinensis extract
 Glyceroeth-12
 Glyceryl alginate, G. collagenate
 Glyceryl polymethacrylate
 Glycolic acid
 Glycolipids
 Glycosaminoglycans
 Glycosphingolipids
 Gnetum amazonicum extract
 Grape (Vitis vinifera) seed oil
 Hazel (Corylus avellana) nut oil
 Honey extract
 Hyaluronic acid
 Hybrid safflower (Carthamus tinctorius) oil
 Hydrogenated castor oil
 Hydrogenated coconut oil
 Hydrogenated cottonseed oil
 Hydrogenated lecithin
 Hydrogenated palm oil
 Hydrogenated polyisobutene
 Hydrogenated soybean oil
 Hydrogenated soybean/cottonseed oil
 Hydrogenated vegetable oil
 Hydrolyzed carboxylprotein
 Hydrolyzed collagen
 Hydrolyzed elastin
 Hydrolyzed fibronectin
 Hydrolyzed glycosaminoglycans
 Hydrolyzed keratin
 Hydrolyzed milk protein
 Hydrolyzed oats
 Hydrolyzed pea protein
 Hydrolyzed placental protein
 Hydrolyzed rice protein
 Hydrolyzed transgenic collagen
 Hydrolyzed wheat protein
 Hydrolyzed silk
 Hydrolyzed sweet almond protein
 Hydrolyzed wheat protein
 Hydroxyethyl chitosan
 Inositol
 Isodecyl salicylate
 Isostearyl hydrolyzed animal protein
 Jojoba (Buxus chinensis) oil
 Jojoba esters
 Keratin amino acids
 Kiwi (Actinidia chinensis) fruit extract
 Kola (Cola acuminata) extract
 Kukui (Aleurites moluccana) nut oil
 Lactamide DGA, L. MEA
 Lactic acid
 Lactobacillus/whew ferment
 Lactococcus hydrolysate
 Lactoyl methylsilanol elastinate
 Lanolin alcohol
 Lauryl PCA
 Lecithin
 Lesquerella fendleri oil
 Liposomes
 Lysine PCA
 Macadamia ternifolia nut oil
 Magnesium aspartate
 Maltitol
 Manganese aspartate
 Mango (Mangifera indica) oil
 Mannan
 Marine polyaminosaccharide
 Mauritiella armata extract
 Maximilliana regia extract
 Meadowfoam (Limnanthes alba) seed oil
 Melaleuca hypericifolia extract

Methylsilanol elastinate, M. mannuronate
 Milk amino acids
 Mineral oil (Paraffinum liquidum)
 Molybdenum aspartate
 Mourin spiranga extract
 Naito gum
 Nelumbium speciosum extract
 Neopentyl glycol dicaprate
 Oat (Avena sativa) protein
 Octyl hydroxystearate
 Ophiopogon japonicus extract
 Orange (Citrus aurantium dulcis) peel wax
 Palmetto extract
 Pantethine
 Panthenyl ethyl ether
 Paraffin
 Partially hydrogenated soybean oil
 Peanut (Arachis hypogaea) oil
 Pecan (Carya illinoensis) oil
 PEG-4, -6, -8, -12
 PEG-70 mango glycerides
 PEG-75 shea butter glycerides
 PEG-75 shorea butter glycerides
 PEG-100 stearate
 Pentaerythrityl isostearate/caprate/caprylate/adipate
 Pentaerythrityl stearate/caprate/caprylate/adipate
 Pentylene glycol
 Perfluoropolyethylisopropyl ether
 Petrolatum
 Petroleum wax
 Pfaffia spp. extract
 Pistachio (Pistacia vera) nut oil
 Placental protein
 Plankton extract
 Polyamino sugar condensate
 Polybutene
 Polyunsaturated fatty acids
 Potassium DNA, P. lactate, P. PCA
 PPG-8/SMDI copolymer
 PPG-20 methyl glucose ether distearate
 Propylene glycol dicaprylate/dicaprate
 Propylene glycol dioctanoate
 Pumpkin (Cucurbita pepo) seed oil
 Quinoa (Chenopodium quinoa) extract
 Rapeseed (Brassica campestris) oil
 Rehmanna chinensis extract
 Rice (Oryza sativa) bran oil
 Rose Water
 Royal jelly extract
 Saccharide isomerate
 Saccharomyces lysate extract
 Saccharomyces/soy protein ferment
 Safflower (Carthamus tinctorius) oil
 Selenium aspartate, S. protein complex
 Sericin
 Serum albumin
 Sesame (Sesamum indicum) oil
 Shea butter (Butyrospermum parkii)
 Shea butter (Butyrospermum parkii) extract
 Shorea stenoptera butter
 Silk amino acids
 Sodium carboxymethyl beta-glucan
 Sodium chondroitin sulfate
 Sodium DNA, S. hyaluronate
 Sodium lactate, S. PCA
 Soluble collagen
 Soluble transgenic elastin
 Soybean (Glycine soja) oil
 Spherical cellulose acetate
 Spondias amara extract
 Squalene
 Stomach extract
 Sunflower (Helianthus annuus) seed oil
 Superoxide dismutase
 Tissue extract
 Tocopheryl acetate, T. linoleate
 Tomato (Solanum lycopersicum) extract

Functions

Tormentil (*Potentilla erecta*) extract
 Trehalose
 Triundecanoin
 Vegetable oil
 Walnut (*Juglans regia*) oil
 Watercress (*Nasturtium officinale*) extract
 Wheat (*Triticum vulgare*) germ extract, germ oil
 Yarrow (*Achillea millefolium*) extract
 Wheat amino acids
 Yeast (*Saccharomyces cerevisiae*) extract (Faex)
 Yogurt filtrate
 Zinc aspartate
 Ziziphus jujuba extract

Naturilizer

2-Aminobutanol
 Aminoethyl propanediol
 Aminomethyl propanediol
 Aminomethyl propanol
 Ammonium carbonate
 Calcium hydroxide
 Diethanolamine
 Ethanolamine
 Glucamine
 Isopropanolamine
 Isopropylamine
 2-Methyl-4-hydroxypyrrolidine
 Morpholine
 Sodium bromate
 Succinic acid
 Tetrahydroxypropyl ethylenediamine
 Triethanolamine
 Tromethamine

Oil absorbent

Hydrated silica
 Polymethyl methacrylate
 Silicon dioxide hydrate
 Walnut (*Juglans regia*) shell powder

Ointment base

Borage (*Burago officinalis*) seed oil
 Caprylic/capric/stearic triglyceride
 Glyceryl cocoate
 Hydrogenated coco-glycerides
 Lanolin
 Mink oil
 Oleostearine
 Tallow

Opacifier

Barium sulfate
 C12-16 alcohols
 Cetearyl octanoate
 Cetyl myristate, C. palmitate
 Cocamidopropyl lauryl ether
 Glyceryl distearate
 Glyceryl hydroxystearate
 Glyceryl myristate, G. stearate
 Glycol distearate, G. stearate
 Magnesium myristate
 PEG-2 distearate, P. stearate
 PEG-2 stearate SE
 PEG-3 distearate
 Propylene glycol myristate, P. g. stearate
 Stearamide
 Stearamide DIBA-stearate
 Stearamide MEA
 Stearamide MEA-stearate
 Stearamidopropyl dimethylamine lactate

Stearyl stearate
 Styrene homopolymer
 Styrene/acrylates copolymer
 Styrene/PVP copolymer
 Triisosteann PEG-6 esters

Plasticizer

Acetyl tributyl citrate
 Acetyl triethyl citrate
 AMP-isostearyl hydrolyzed wheat protein
 AMPD-isostearyl hydrolyzed collagen
 Cyclohexane dimethanol dibenzoate
 Dibutyl phthalate
 Diethyl phthalate
 Diethylene glycol dibenzoate
 Diisopropyl sebacate
 Dimethicone copolyol
 Dimethyl phthalate
 Dipropylene glycol dibenzoate
 Ethyl ester of hydrolyzed keratin
 Glycerol tribenzoate
 Glycol
 Hydrolyzed serum protein
 Isocetyl salicylate
 Isodecyl benzoate
 Isoeicosane
 Isopropyl lanolate
 Isostearyl hydrolyzed collagen
 Lauroyl hydrolyzed collagen
 Manne collagen
 Monostearyl citrate
 Neopentyl glycol dibenzoate
 Octyl benzoate, O. laurate
 PEG-60 shea butter glycerides
 Pentaerythrityl tetrabenzoate
 Polyoxyethylene glycol dibenzoate
 Polypropylene glycol dibenzoate
 PPG-12-PEG-50 lanolin
 PPG-20 cetyl ether
 PPG-20 lanolin alcohol ether
 Propylene glycol dibenzoate
 Propylene glycol myristyl ether acetate
 Rice (*Oryza sativa*) bran wax
 Serum protein
 Tosylamide/epoxy resin
 Triacetin
 Tributyl citrate
 Triethyl citrate
 Trimethyl pentanediol dibenzoate
 Trimethylethanedibenzoate

Polish

Acrylates copolymer
 Aluminum silicate
 Neatsfoot oil
 Tallow

Polymer

Acrylamide sodium acrylate copolymer
 Acrylates-VA crosspolymer
 Acrylates/acrylamide copolymer
 Acrylates/hydroxyesters acrylates copolymer
 Acrylates/octylacrylamide copolymer
 Acrylates/stearate-20 methacrylate copolymer
 Adipic acid-epoxypropyl diethylenetriamine copolymer
 Adipic acid/dimethylaminohydroxypropyl diethylene triamine copolymer
 Ammonium acrylates copolymer

Ammonium acrylates/acrylonitril copolymer
 AMP-acrylates copolymer
 AMP-isostearyl hydrolyzed collagen
 Butylester of PVM-MA copolymer
 Calcium carrageenan
 Carboxylated vinylacetate terpolymer
 Ceteareth-2 phosphate
 Ceteareth-5 phosphate
 Ceteareth-10 phosphate
 Ceteareth-29, -34
 Coco-glucoside
 Cocodimonium hydroxypropyloxethyl cellulose
 C12-13 pareth-4, -9, -23
 DEA-ceteareth-2-phosphate
 DEA-oleth-5-phosphate
 DEA-oleth-20-phosphate
 Diglycol/CHDM/isophthalates/SIP copolymer
 Diisopropyl dimer dilinoleate
 Diisostearyl trimethylolpropane siloxy silicate
 Diisostearyl dimer dilinoleate
 Dilinoleic acid
 Dodecanedioic acid/cetearyl alcohol/glycol copolymer
 Eclipta alba extract
 Ethyl ester of PVM/MA copolymer
 Ethylene/acrylic acid copolymer
 Ethylene/VA copolymer
 Glyceth-26 phosphate
 Hyaluronic acid
 Hydrolyzed RNA
 Hydrolyzed wheat protein polysiloxane polymer
 Hydroxypropyltrimonium hydrolyzed collagen
 Hydroxypropyltrimonium hydrolyzed wheat protein
 Laneth-40
 Laurylidimonium hydroxypropyl hydrolyzed soy protein
 Methacryloyl ethyl betaine/acrylates copolymer
 Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
 Oleth-2 phosphate
 Oleth-5 phosphate
 PEG-3 lanolate
 PEG-4 stearate
 PEG-5M
 PEG-7 glyceryl cocoate
 PEG-8 glyceryl laurate
 PEG-8/SMDI copolymer
 PEG-9 castor oil
 PEG-9M
 PEG-11 babassu glycerides
 PEG-12 palm kernel glycerides
 PEG-12 stearate
 PEG-14 avocado glycerides
 PEG-15 glyceryl laurate
 PEG-20 corn glycerides
 PEG-20 evening primrose glycerides
 PEG-20 glyceryl oleate
 PEG-23 oleate
 PEG-23M
 PEG-29 castor oil
 PEG-42 babassu glycerides
 PEG-45 safflower glycerides
 PEG-45M
 PEG-60 evening primrose glycerides
 PEG-60 hydrogenated castor oil
 PEG-75 castor oil
 PEG-90M
 PEG-120 distearate

3 BETTER IDEAS.**1 BETTER SOURCE.**

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Functions

PEG-150 lanolin
 PEG-160M
 PG-hydroxycellulose lauryldimonium chloride
 PG-hydroxyethylcellulose cocodimonium chloride
 PG-hydroxyethylcellulose stearyldimonium chloride
 Polyethylene, ionomer
 Polyethylene, micronized
 Polyethylene, oxidized
 Polyglyceryl-2 polyhydroxystearate
 Polymethacrylamidopropyltrimonium chloride
 Polyquaternium-6, -7, -10, -11, -22, -39
 Polysilicone-8
 Potassium alginate
 Potassium lauroyl collagen amino acids
 Potassium lauroyl hydrolyzed soy protein
 Potassium lauroyl wheat amino acids
 PPG-8/SMDI copolymer
 PPG-12/SMDI copolymer
 PPG-51/SMDI copolymer
 PVM/MA decadiene crosspolymer
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/VA copolymer
 Sodium cocoyl hydrolyzed wheat protein
 Steardimonium hydroxypropyl hydrolyzed wheat protein
 Steareth-2 phosphate
 TEA-acrylates/acrylonitril copolymer
 Tosylamide/epoxy resin
 Tosylamide/formaldehyde resin
 Trideceth-5, -6, -7, -8
 VA/butyl maleate/isobornyl acrylate copolymer
 VA/crotonates/vinyl neodecanoate copolymer
 Vinyl caprolactam/PVP/
 dimethylaminoethylmethacrylate copolymer
 Wheat (Triticum vulgare) protein
 Xanthan gum

Powder

Acrylates copolymer, spherical powder
 Attapulgit
 Boron nitride
 Calcium aluminum borosilicate
 Calcium carbonate
 Cellulose triacetate
 Corn (Zea mays) cob powder, starch
 Hydrogenated jojoba wax
 Magnesium carbonate, M. myristate
 Magnesium stearate
 Mica
 Microcrystalline cellulose
 Nylon-6
 Nylon powder
 Oat (Avena sativa) starch
 Polyamide 12
 Polyethylene
 Polymethyl methacrylate
 Polymethylsilsesquioxane
 PTFE
 Silica
 Silk powder
 Spherical cellulose acetate
 Talc
 Tapioca dextrin
 Zinc laurate

Powder, absorbent

Aluminum starch octenylsuccinate
 Clays (white, yellow, red, green, pink)
 Sorbitol
 Tapioca

Preservative

Alcohol
 Ascorbic acid
 Ascorbyl palmitate

Benzalkonium chloride
 Benzethonium chloride
 Benzoic acid
 Benzyl alcohol
 Benzylparaben
 5-Bromo-5-nitro-1,3-dioxane
 2-Bromo-2-nitropropane-1,3-diol
 Butylparaben
 Calcium propionate
 Cetrimonium bromide
 Cetyl pyridinium chloride
 Chloroxylenol
 Chlorphenesin
 o-Cymen-3-ol
 Diazolidinyl urea
 Dichlorobenzyl alcohol
 Dichlorophene
 Diiodomethyltolylsulfone
 Dimethyl hydroxymethyl pyrazole
 Dimethyl oxazolidine
 Disodium EDTA
 DMDM hydantoin
 EDTA
 Erythorbic acid
 7-Ethylbicyclooxazolidine
 Ethylparaben
 Fomopsis officinalis oil
 Formaldehyde
 Glutaral
 Glyceryl laurate
 HEDTA
 Hexamidine diisethionate
 Hexetidine
 Imidazolidinyl urea
 Isobutylparaben
 Isopropyl sorbate
 Isopropylparaben
 MDM hydantoin
 Methenammium chloride
 Methyl paraben sodium
 Methylchloroisothiazolinone
 Methyltribromo glutaronitrile
 Methylisothiazolinone
 Methylparaben
 Mushroom (Cordyceps sabolifera) extract
 Myrtrimonium bromide
 Pentasodium pentetate
 Penicilic acid
 Phenethyl alcohol
 Phenol
 Phenyl mercuric acetate
 o-Phenylphenol
 Polyaminopropyl biguanide
 Polymethoxy bicyclic oxazolidine
 Potassium sorbate
 Propylparaben
 Quaternium-15
 Salicylic acid
 Sodium benzoate, S. bisulfate
 Sodium butylparaben, S. dehydroacetate
 Sodium erythorbate, S. ethyl paraben
 Sodium hydroxymethylglycinate
 Sodium metabisulfite, S. methylparaben
 Sodium o-phenylphenate
 Sodium propionate, S. propylparaben
 Sodium pyrimithione, S. salicylate
 Sodium sulfite
 Sorbic acid
 Tetrasodium EDTA
 Thimerosal
 Thymol
 Tris (hydroxymethyl) nitromethane
 Trisodium EDTA, T. HEDTA
 Usmic acid
 Zinc PCA

Propellant

Butane
 Dimethyl ether
 Hydrofluorocarbon 152a

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Functions

Isobutane
Propane

Protein

Albumen
Atelocollagen
Bletia hyacinthina extract
Chrysanthemum monfolium extract
Cocodimonium hydroxypropyl hydrolyzed collagen
Cocodimonium hydroxypropyl hydrolyzed keratin
Cocodimonium hydroxypropyl hydrolyzed soy protein
Cocodimonium hydroxypropyl hydrolyzed wheat protein
Cocoyl hydrolyzed collagen
Collagen, C. phthalate
Collagen amino-polysiloxane hydrolyzate
Deoxyribonucleic acid
Desamido collagen
Elastin amino acids
Embryo extract
Ethyl ester of hydrolyzed animal protein
Fibronectin
Gelatin
Human placental protein
Hydrolyzed collagen
Hydrolyzed extensin
Hydrolyzed fish protein
Hydrolyzed hemoglobin
Hydrolyzed keratin
Hydrolyzed lactalbumin
Hydrolyzed milk protein
Hydrolyzed soy flour
Hydrolyzed sweet almond protein
Hydroxypropyltrimonium hydrolyzed collagen
Isostearyl hydrolyzed collagen
Keratin
Lactoferrin
Lactoglobulin
Lauryldimonium hydroxypropyl hydrolyzed collagen
Marine collagen
Methylsilanol elastinate
Potassium abietoyl hydrolyzed collagen
Potassium cocoyl hydrolyzed collagen
Potassium myristoyl hydrolyzed collagen
Potassium oleoyl hydrolyzed collagen
Potassium undecylenoyl hydrolyzed collagen
Propyltrimonium hydrolyzed collagen
Propyltrimonium hydrolyzed soy protein
Propyltrimonium hydrolyzed wheat protein
Protein hydrolysates
Quaternium-79 hydrolyzed keratin
Quaternium-79 hydrolyzed silk
Rice peptide
RNA
Serum albumin, S. protein
Silk powder

Sodium caseinate
Sodium cocoyl hydrolyzed collagen
Sodium cocoyl hydrolyzed soy protein
Sodium myristoyl hydrolyzed collagen
Sodium oleoyl hydrolyzed collagen
Sodium stearyl hydrolyzed collagen
Sodium undecylenoyl hydrolyzed collagen
Sodium/TEA-lauroyl hydrolyzed collagen
Sodium/TEA-lauroyl hydrolyzed keratin
Soluble collagen
Soluble keratin
Soluble wheat protein
Soy (Glycine soja) protein
Steardimonium hydroxypropyl hydrolyzed collagen
Steardimonium hydroxyethyl hydrolyzed collagen
TEA-cocoyl hydrolyzed collagen
TEA-cocoyl hydrolyzed soy protein
TEA-lauroyl collagen amino acids
TEA-lauroyl keratin amino acids
Trachea hydrolysate
Triethonium hydrolyzed collagen ethosulfate
Wheat (Triticum vulgare) germ extract, protein
Wheat amino acids
Wheat peptide
Wheat protein

Protein, hydrolyzed

Ethyl ester of hydrolyzed silk
Hydrolyzed casein
Hydrolyzed elastin
Hydrolyzed mushroom (Tricholoma matsutake) extract
Hydrolyzed pea protein
Hydrolyzed rice protein
Hydrolyzed serum protein
Hydrolyzed silk
Hydrolyzed soy protein
Hydrolyzed vegetable protein
Hydrolyzed wheat protein
Hydroxypropyltrimonium hydrolyzed casein
Hydroxypropyltrimonium hydrolyzed silk
Hydroxypropyltrimonium hydrolyzed soy protein
Hydroxypropyltrimonium hydrolyzed wheat protein

Reducing agent

Diminystyl thiopropionate
Hydrolyzed zein, iodized
Hydrolyzed zein, sulfonized
Zinc formaldehyde sulfoxylate

Refatting agent

Caprylic/capric triglyceride PEG-4 esters
Cocamide MIPA
Diisostearyl dimer dilinoleate
Hydrogenated palm kernel glycerides
Isostearyl erucate, I. isostearate
Lecithin

Liposomes

Magnesium sulfate hepta-hydrate
Octyldodecyl behenate, O. myristate
bis-Octyldodecyl stearyl dimer dilinoleate
Octyldodecyl stearyl stearate
Octyl hydroxystearate
PEG-3 stearate
PEG-4 oleamide
PEG-6 capric/caprylic glycerides
PEG-7 glyceryl cocoate
PEG-16
Propylene glycol dipelargonate

Resin

Acrylates/hydroxyesters acrylates copolymer
Ethylene vinyl acetate
Glyceryl abietate
Methacryloyl ethyl betaine/acrylates copolymer
4-Methyl benzenesulfonamide
Polypropylene
Polyquaternium-16, -14
Sucrose benzoate

Sequestrant

Calcium acetate, C. phosphate, C. sulfate
Encapsulation and entrapment systems
Pentasodium triphosphate
Phosphoric acid
Potassium phosphate, P. sodium tartrate
Silicon dioxide hydrate
Sodium citrate, S. gluconate
Sorbitol
Tartaric acid
Tripotassium EDTA
Trisodium NTA

Silicone

Amino bispropyl dimethicone
Ammonium dimethicone copolyol sulfate
Amodimethicone
Behenoxy dimethicone
C16-18 alkyl methicone
Cetyl dimethicone copolyol
Cyclomethicone Diisostearyl trimethylolpropane siloxy silicate
Diisodecyl adipate
Diisostearyl trimethylolpropane siloxy silicate
Dimethicone
Dimethicone copolyol
Dimethicone copolyol almondate
Dimethicone copolyol isostearate
Dimethicone copolyol olive, D. c. phthalate
Dimethicone copolyolamine
Dimethiconol fluoroalcohol dilinoleic acid
Dimethiconol hydroxystearate, D. stearate
Diphenyl dimethicone
Disodium-PG-propyldimethicone thiosulfate
Isopropyl hydroxybutylamide dimethicone copolyol
Methicone

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Proteins
Hydrocoll, Solu-Soy, Wheat-Pro

Functions

Octamethyl cyclotetrasiloxane
Phenyl methicone, P. trimethicone
Polyether Trisiloxane
Polymethylsilsequioxane
Polysilicone-8
Quaternium-80
Silicone quaternium-1, -8
Sodium-PG-propyl thiosulfate dimethicone
Stearoxymethicone/dimethicone copolymer
Trimethylsilylamodimethicone

Skin calming agent

Cornflower (*Centaurea cyanus*) extract
Fennel (*Foeniculum vulgare*) extract
Fenugreek extract
Linden (*Tilia cordata*) extract
Valerian (*Valeriana officinalis*) extract

Skin cleanser

Dog rose (*Rosa canina*) hips extract
Papaya (*Carica papaya*) extract
Peach (*Prunus persica*) extract
Rose (*Rosa multiflora*) extract
Willow (*Salix alba*) extract

Skin conditioner

Artemisia apiacea extract
Astrocaryum tucuma extract
Bactris gasipaes extract
Biotin
Bishydroxyethyl bisceryl malonamide
Blechna hyacinthina extract
Borage (*Borago officinalis*) seed oil
Borageamidopropyl phosphatidyl PG-dimonium chloride
Carbocysteine
Catalpa kaempferia extract
Coco phosphatidyl PG-dimonium chloride
Cocodimonium hydroxypropyl hydrolyzed keratin
Collagen amino acids
Cyclomethicone
Dimethicone, D. copolyol acetate
Embllica officinalis extract
Equisetum arvense extract
Ethyl ester of hydrolyzed animal protein
Evening primrose (*Oenothera biennis*) oil
Fomes fomentarius extract
Fomistopsis officinalis oil
Gelatin
Ginseng hydroxypropyltrimonium chloride
butylene glycol
Glycolipids
Glycosphingolipids
Gnetum amazonicum extract
Honey (Mel)
Hydrolyzed carbolipoprotein
Hydrolyzed elastin
Hydrolyzed pea protein
Hydrolyzed rice protein
Hydrolyzed serum protein
Hydrolyzed silk
Hydrolyzed soy protein
Hydrolyzed vegetable protein
Hydrolyzed wheat protein
Inga edulis extract
Kiwi (*Actinidia chinensis*) fruit extract
Laminaria japonica extract
Lecithin
Marsilea minuta extract
Nettle (*Urtica dioica*) extract
Panthenamidodecanediol
Pearls (*Margarita margarita*)
PEG-8/SMDI ceramides extract
Phenyl trimethicone
Phytantriol
Polygonum multiflorum extract
Polyquaternium-7, -22, -39
Polyurethane-10, -11, -12, -13, -14, -15, -16, -17, -18, -19, -20, -21, -22, -23, -24, -25, -26, -27, -28, -29, -30, -31, -32, -33, -34, -35, -36, -37, -38, -39, -40, -41, -42, -43, -44, -45, -46, -47, -48, -49, -50, -51, -52, -53, -54, -55, -56, -57, -58, -59, -60, -61, -62, -63, -64, -65, -66, -67, -68, -69, -70, -71, -72, -73, -74, -75, -76, -77, -78, -79, -80, -81, -82, -83, -84, -85, -86, -87, -88, -89, -90, -91, -92, -93, -94, -95, -96, -97, -98, -99, -100

Potassium cocoyl hydrolyzed collagen
Retinyl palmitate polypeptide
Salvia miltiorrhiza extract
Sili
Sodium cocoyl hydrolyzed collagen
Soluble transgenic elastin
Scurtmonium hydroxyethyl hydrolyzed collagen
Stearyl methicone

Skin healing

Calendula officinalis extract
Glycoproteins
Hydrocortyl (*Centella asiatica*) extract
Oat (*Avena sativa*) extract
Sandalwood (*Santalum album*) extract
Spearmint (*Mentha viridis*) extract

Skin lightening/whitening agent

Ascorbic acid polypeptide
Bearberry (*Arctostaphylos uva-ursi*) extract
Hydroquinone-beta-D-glucopyranoside
Lemon (*Citrus medica limonum*) peel extract
Pearls (*Margarita margarita*)

Skin protectant

Acetylmethylonyl methylsilanol elastinate
Allantoin, A. aluminum hydroxide
Aloe barbadensis, A. b. extract
Aluminum starch octenylsuccinate
Anise (*Pimpinella anisum*) extract
Arnica montana extract
Artemisia apiacea extract
Ascorbyl methylsilanol pectinate
Astrocaryum tucuma extract
Bactris gasipaes extract
Betaglucan
Bishydroxyethyl bisceryl malonamide
Blechna hyacinthina extract
C 18-70 Isoparaffin
Calendula amurensis extract
Carboxymethyl chitin
Carcinia cambogia extract
Carrot (*Daucus carota*) extract
Carrot (*Daucus carota sativa*) oil
Catalpa kaempferia extract
Chenopodium album extract
Chitosan
Chrysanthemum morifolium extract
Collagen
Corn poppy (*Papaver rhoeas*) extract
Crataegus cuneata extract
Crataegus monogyna extract
Cypress (*Cupressus sempervirens*) extract
Dimethicone
Dimethiconol fluoroalcohol dilinoleic acid
Dimethiconol hydroxystearate, D. stearate
Dimethylsilanol hyaluronate
Echitea glauca extract
Embryo extract
Entada phaseoloides extract
Equisetum arvense extract
Eupatorium fortunei extract
Euterpe precatoria extract
Fenugreek extract
Fomistopsis officinalis oil, F. pinicola extract
Galla sinensis extract
Gentian (*Gentiana lutea*) extract
Gleditsia sinensis extract
Glyceryl ricinoleate
Glycolipids
Hierochloe odorata extract
Hyaluronic acid
Hydrogenated lecithin
Hydrolyzed lupine protein
Hydrolyzed milk protein
Hydrolyzed mushroom (*Tricholoma matsutake*) extract
Indian cress (*Tromaeolum minus*) extract

Isodecyl salicylate
Jojoba (*Buxus chinensis*) oil
Lady's Thistle (*Silybum marianum*) extract
Laminaria japonica extract
Ligusticum jeholense extract
Liposomes
Magnolia spp. extract
Mango kernel oil
Marsilea minuta extract
Melaleuca hypericifolia extract
Melaleuca uncinata extract
Melaleuca wilsonii extract
Methylsilanol tri PEG-8 glyceryl cocoate
Oat (*Avena sativa*) meal
Oyster (*Ostrea*) shell extract
Palmitamidodecanediol
Pearls (*Margarita margarita*)
Pentahydrosqualene
Perfluorodecalin
Perfluoropolyethylisopropyl ether
Petrolatum
PEG-8/SMDI copolymer
PEG-42 Ebinko ceramides extract
Pfaffia spp. extract
Phospholipids
Plankton extract
Polygonum multiflorum extract
Pongamol
PPG-12/SMDI Copolymer
PPG-51/SMDI Copolymer
Propyltrimonium hydrolyzed collagen
Quinoa (*Chenopodium quinoa*) extract, oil
Salvia miltiorrhiza extract
Sambucus nigra extract
Shark liver oil
Shorea robusta extract
Sodium chondroitin sulfate
Soluble transgenic elastin
Steartrimonium hydroxyethyl hydrolyzed collagen
Sterculia plataniifolia extract
Superoxide dismutase
Trachea hydrolysate
Wheat (*Triticum vulgare*) germ extract, protein
White nettle (*Lamium album*) extract
Withania somniferum extract
Xanthoxylum bungeanum extract
Zinc oxide

Skin smoothing agent

Althea officinalis extract
Coltsfoot (*Tussilago farfara*) leaf extract
Comfrey (*Symphytum officinale*) leaf extract
Plantain (*Plantago major*) extract
Sericin

Skin softening

Clays (white, yellow, red, green, pink)
Cucumber (*Cucumis sativus*) extract
Kelp (*Macrocystis pyrifera*) extract
Peach (*Prunus persica*) extract
Phenethyl dimethicone

Skin soothing

Calendula officinalis extract
Cherry bark extract
Cucumber (*Cucumis sativus*) extract
Garlic (*Allium sativum*) extract
Hyssop (*Hyssopus officinalis*) extract
Jasmine (*Jasminum officinale*) extract
Kelp (*Macrocystis pyrifera*) extract
Mango kernel oil
Meadowsweet (*Spiraea ulmaria*) extract
Quince (*Pyrus cydonia*) seed extract
Slippery elm extract
Valerian (*Valeriana officinalis*) extract
Willow (*Salix alba*) extract
Witch hazel (*Hamamelis virginiana*) extract
Yarrow (*Achillea millefolium*) extract

Functions

Solubilizer

Acetyl monoethanolamine
Almond oil PEG-6 esters
2-Aminobutanol
Aminoethyl propanediol
Aminomethyl propanediol, A. propanol
Apricot kernel oil PEG-6 esters
Benzalkonium chloride
Butoxydiglycol
Butyl glucoside
Butylene glycol
Butyloctanol
Capric-caprylic mono-diglycende
Capryl caprylylglucoside
Caprylic/capric triglycende
Caprylic/capric/linoleic triglycende
Caprylic/capric/oleic triglycerides
Caprylyl/capryl glucoside
Ceteareth-20
Ceteth-10
Cetyl PPG-2 isodeceth-7 carboxylate
Cholesterol
Corn oil PEG-6 esters
Decaglycerol monodiolate
Diethanolamine
Dilaureth-10 phosphate
Dimethyl octylnediol
Dioleth-8 phosphate
Glycereth-7 -26
Glyceryl caprylate, G. dilaurate
Glyceryl caprylate/caprate
Isoeicosane
Isopropanolamine
Isosteareth-20
Laneth-5, -15
Laureth-23
Methylated cyclodextrin
Myreth-3
Myreth-3-octanoate
Nonoxynol-10, -12, -14, -40, -50
Octoxynol-11, -40
Oleoamphihydroxypropylsulfonate
Oleth-3, -5, -10, -15, -20, -25, -50
Oleth-20 phosphate
PEG-4, -6, -8, -12, -16, -20, -32, -40,
PEG-4 dilaurate
PEG-6 capric/caprylic glycerides
PEG-6 methyl ether
PEG-8 distearate
PEG-12 laurate

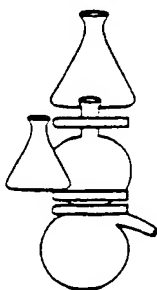
PEG-15 castor oil
PEG-18 stearate
PEG-20 glyceryl isostearate, P. g. laurate
PEG-20 glyceryl oleate, P. g. stearate
PEG-20 methyl glucose sesquisteate
PEG-20 sorbitan isostearate
PEG-20 sorbitan trisostearate
PEG-24 hydrogenated lanolin
PEG-25 castor oil
PEG-25 hydrogenated castor oil
PEG-30 castor oil
PEG-30 glyceryl cocoate
PEG-30 glyceryl isostearate
PEG-30 glyceryl laurate
PEG-30 glyceryl oleate
PEG-30 glyceryl stearate
PEG-33 castor oil
PEG-35 castor oil
PEG-36 castor oil
PEG-40 castor oil
PEG-40 glyceryl laurate, P. g. stearate
PEG-40 hydrogenated castor oil
PEG-40 hydrogenated castor oil PCA isostearate
PEG-40 sorbitan diisostearate
PEG-45 palm kernel glycerides
PEG-48 hydrogenated castor oil
PEG-50 castor oil
PEG-50 hydrogenated castor oil
PEG-60 almond glycerides
PEG-60 castor oil
PEG-60 com glycerides
PEG-60 glyceryl isostearate, P. g. stearate
PEG-60 hydrogenated castor oil
PEG-60 lanolin
PEG-70 mango glycerides
PEG-75 lanolin
PEG-75 shea butter glycerides
PEG-75 shorea butter glycerides
PEG-80 hydrogenated castor oil
PEG-80 jojoba acid/alcohol
PEG-80 sorbitan laurate
PEG-100 castor oil
PEG-100 hydrogenated castor oil
PEG-120 jojoba acid/alcohol
PEG-200 trihydroxysteann
Poloxamer 407
Polyglyceryl-3 oleate
Polyglyceryl-6 dioleate
Polyglyceryl-10 decaoleate, P. tetraoleate
Polysorbate 20, 60, 80
PPG-2-isodeceth-4, -6, -9, -12

PPG-3 isosteareth-9
PPG-3 isoceteth-20 acetate
PPG-5-ceteth-10 phosphate
PPG-5-ceteth-20
PPG-6-decyltetradeceth-12, -20, -30
PPG-12-PEG-65 lanolin oil
PPG-15 stearyl ether
PPG-18 butyl ether
PPG-24 butyl ether
PPG-26-buteth-26
PPG-33 butyl ether
PPG-33-buteth-45
PPG-40-PEG-60 lanolin oil
PPG-50 ceryl ether
Propylene glycol dicaprylate, dicaprylate/
dicaprate
Ricinoleamide DEA
Ricinoleth-40
Sodium alpha olefin sulfonate
Sodium lauryl sulfate
Sodium methylnaphthalenesulfonate
Triethanolamine
Trioctanol
Tromethamine

Solvent

Acetic acid
Acetone
Alcohol, A. denat.
Benzophenone
Butoxydiglycol
Butyl acetate
n-Butyl alcohol
Butyl myristate, B. stearate
Butylene glycol
C9-11 isoparaffin
C10-11 isoparaffin
C10-13 isoparaffin
Caprylic alcohol
Castor (Ricinus communis) oil
Cetearyl octanoate
Cetyl stearyl octanoate
Chlorobutanol
Decyl alcohol
Diethylene glycol
Diethylene glycol dibenzoate
Diethyl sebacate
Diisocetyl adipate
Diisopropyl adipate, D. sebacate
Dimethyl phthalate
Dipropylene glycol

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Functions

Dipropylene glycol dibenzoate
 Ethoxydiglycol
 Ethyl acetate, E. lactate
 Ethyl myristate, E. oleate
 2-Ethylhexyl isostearate
 Glycerin
 Glycofuroil
 Heptane
 Hexyl alcohol
 Hexylene glycol
 Isobutyl stearate
 Isocetyl salicylate
 Isodecyl benzoate, I. isononanoate
 Isodecyl octanoate, I. oleate
 Isododecane
 Isoeicosane
 Isohexadecane
 Isopropyl alcohol, I. myristate
 Isostearyl stearoyl stearate
 Laureth-2 acetate
 Methoxydiglycol
 Methoxyvisopropanol
 Methyl alcohol
 Methyl propanediol
 Methylene chloride
 MEK
 MIBK
 Morpholine
 Octyl benzoate, O. isononanoate
 Octyl laurate, O. palmitate
 Octyldodecyl lactate
 Olive oil PEG-6 esters
 Peanut oil PEG-6 esters
 Pentane
 Petroleum distillates
 PEG-6 methyl ether
 PEG-12
 PEG-20 hydrogenated castor oil
 PEG-33 castor oil
 PEG-50 glyceryl cocoate
 Polyglyceryl-2 dioleate
 Polyglyceryl-3 diisostearate
 Polyoxyethylene glycol dibenzoate
 Polypropylene glycol dibenzoate
 PPG-2 myristyl ether propionate
 PPG-3
 PPG-20 lanolin alcohol ether
 Propyl alcohol
 Propylene carbonate
 Propylene glycol
 Propylene glycol dibenzoate
 Propylene glycol methyl ether
 Propylene glycol myristate
 Pyridine
 Sesame (Sesamum indicum) oil
 Stearyl heptanoate
 Toluene
 Xylene

SPF booster

Borjoo sorbitol extract
 Isohexadecyl salicylate
 Styrene/acrylates copolymer
 Titanium dioxide
 Yeast (Saccharomyces cerevisiae) extract (Faex)

Stabilizer

Acrylates-VA crosspolymer
 Acrylates/ceteth-20 methacrylates copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Acrylates/vinyl isodecanoate crosspolymer
 Alkyldimethylamine oxide
 C10 polycarbonyl polyglycol ester
 Calcium alginate
 Cocamidopropyl dimethylamine lactate
 Cocamine oxide
 Colloidal silica sols
 Cyclodextrin
 Disodium EDTA
 Gellan gum

Glyceryl diisostearate, G. stearate SE
 Glyceryl mono-di-tri-caprylate
 Hydrogenated coco-glycerides
 Hydrogenated C12-18 triglycerides
 Hydrogenated tallow glycerides
 Hydrolyzed oat flour
 Hydroxyoctacosanyl hydroxystearate
 Karaya (Sterculia urens) gum
 Laureth-3
 Maltitol
 Methylated cyclodextrin
 Oleamide
 PEG-40 stearate
 PEG-40/dodecyl glycol copolymer
 Perfluoropolyether polyisopropyl ether
 Polyethylene paste
 PPG-5 lanolin wax
 PPG-7-buteth-10
 PPG-10 cetyl ether phosphate
 Propylene carbonate, P. glycol alginate
 PVM/MA decadiene crosspolymer
 Sodium acrylates/vinyl isodecanoate crosspolymer
 Sodium carboxymethylcellulose
 Sorbitan laurate
 Stearic hydrazide
 2,2',4,4'-Tetrahydroxybenzophenone
 Tricaprin
 Tricaprylin
 Trilaurin
 Trimyristin
 Tripalmitin
 Tristearin

Stimulant

Capsicum frutescens extract
 Eleuthero ginseng (Acanthopanax senticosus) extract
 Guarana (Paullinia cupana) extract
 Lactococcus hydrolysate
 Methylsilanol elastinate
 Methylsilanol hydroxyproline aspartate
 TEA-hydroiodide
 Tocopheryl nicotinate
 Urocanic acid
 Yeast (Saccharomyces cerevisiae) extract (Faex)
 Zedoary (Curcuma zedoaria) oil
 Zinc DNA

Sunscreen

Basil (Basilicum sanctum) oil extract
 Basil (Ocimum basilicum) extract
 Benzophenone-3 -4
 3-Benzylidene camphor
 Borjoo sorbitol extract
 C12-15 alkyl benzoate
 Coffee (Coffea arabica) bean extract
 Ethyl salicylate
 Glyceryl PABA
 Homosalate
 Hydroquinone-beta-D-glucopyranoside
 Isoamyl p-methoxycinnamate
 Isopropylbenzyl salicylate
 Job's tears (Coix lacryma-jobi) extract
 Menthyl anthranilate
 Octyl dimethyl PABA, O. methoxycinnamate
 Octyl salicylate, O. triazone
 Oryzanol
 Pansy (Viola tricolor) extract
 PEG-25 PABA
 Phenylbenzimidazole sulfonic acid
 Rice (Oryza sativa) bran oil
 TEA-salicylate
 Titanium dioxide

Sunscreen UVB

Benzophenone-5
 Eclipta alba extract
 PEG-25 PABA
 Steareth-100
 Tridecyl salicylate

Superfating agent

Linoleamide DEA
 PEG-20 almond glycerides
 PEG-60 lanolin
 PEG-75 lanolin

Surfactant

Alkyl dimethyl betaine
 Alkyldimethylamine oxide
 Ammonium cocoyl sarcosinate
 Ammonium C12-15 alkyl sulfate
 Ammonium dimethicone copolyol sulfate
 Ammonium laureth-5 sulfate
 Ammonium laureth-12 sulfate
 Ammonium laureth sulfate
 Ammonium lauroyl sarcosinate
 Ammonium lauryl sulfate, A.I. sulfosuccinate
 Ammonium myreth sulfate
 Ammonium nonoxynol 4 sulfate
 Azelamide MEA
 C20-40 alcohol ethoxylate
 C30-50 alcohol ethoxylate
 C40-60 alcohol ethoxylate
 Calcium dodecylbenzene sulfonate
 Calcium laurate
 Cetareth-2 phosphate
 Cetareth-5 phosphate
 Cetareth-10 phosphate
 Cetoleth-25
 Cetyl betaine, C. phosphate
 Cocamide MEA ethoxylate
 Cocamidopropyl betaine, potassium salt
 Cocamidopropyl betaine ammonium salt
 Cocamidopropyl hydroxy sultaine
 Cocamidopropyl hydroxy sultaine, ammonium salt
 Cocamidopropyl hydroxy sultaine, potassium salt
 Cocamidopropylamine oxide
 Coceth-7 carboxylic acid
 Coco-glucoside
 Cocoamphodiacetate lauryl-laureth sulfate
 Cocoamphodiacetate lauryl sulfate
 Cocoamphodiacetate trideceth sulfate
 Coco phosphatidyl PG-dimonium chloride
 N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
 Cocoyl glutamic acid
 Cocoyl hydrolyzed soy protein
 Cocoyl hydroxyethyl imidazoline
 C11-15 pareth-9, -12, -20, -30, -40
 C12-13 pareth sulfate
 C12-13 pareth-5 carboxylic acid
 C12-15 pareth-12
 C14-15 pareth-8 carboxylic acid
 DEA-oleth-5-phosphate
 DEA-oleth-20-phosphate
 Deceth-3, -6, -8
 Decyltetradeceth-25
 Dicapeth-10 phosphoric acid
 Dimethicone copolyol
 Dimethicone copolyol almondate, D. c. isostearate
 Dimethicone copolyol laurate, D. c. olivate
 Dimethicone copolyol phthalate
 Dimethicone copolyolamine
 Dimethicone propyl PG-betaine
 Dioctyldodeceth-2 lauryl glutamate
 Dioctyldodeceth-5 lauryl glutamate
 Dioctyldodecyl lauryl glutamate
 Disodium capryloamphodiacetate
 Disodium cocoamphodiacetate
 Disodium hydrogenated tallow glutamate
 Disodium laneth-5 sulfosuccinate
 Disodium lauramide MEA-sulfosuccinate
 Disodium laureth sulfosuccinate
 Disodium oleamide MIPA-sulfosuccinate
 Disodium oleamide PEG-2 sulfosuccinate
 Disodium oleth-3 sulfosuccinate
 Disodium ricinoleamide MEA-sulfosuccinate
 Disodium tallamide MEA-sulfosuccinate
 Distareth-2 lauryl glutamate

Functions

Disteareth-5 lauroyl glutamate
 Ethoxylated fatty alcohol
 Ethoxylated glycerol sorbitan saturated fatty acid ester
 Ethoxylated glycerol sorbitan unsaturated fatty acid ester
 Glycereth-25 PCA isostearate
 Glycereth-26 phosphate
 Glyceryl hydroxystearate
 Hydrogenated tallowoyl glutamic acid
 Isopropyl hydroxybutyramide dimethicone copolyol
 Lauramidopropyl betaine
 Laureth-1, -2, -3, -4, -7, -12, -16
 Laureth-3 carboxylic acid, L. phosphate
 Laureth-5 carboxylic acid
 Laureth-11 carboxylic acid
 Lauroyl sarcosine
 Lauryl dimethylamine cyclocarboxypropyloleate
 Lauryl hydroxyethyl imidazoline
 Linoleamide DEA
 Magnesium laureth-8 sulfate
 Meroxapal 105, 171, 172
 MEA-lauryl sulfate
 Mixed isopropanolamines myristate
 Myreth-7
 Mynstoyl sarcosine
 Mynstoyl alcohol
 Nonoxynol-7, -9, -13, -15
 Nonoxynol-10 carboxylic acid
 Octoxynol-10, -12
 Octyldodeceth-10, -16
 Oleoyl sarcosine
 Oleth-2 phosphate
 Oleth-5 phosphate
 Oleyl betaine
 Oleyl hydroxyethyl imidazoline
 Palmitamine oxide
 Palmityl betaine
 PCA ethyl cocoyl arginate
 PEG-7 hydrogenated castor oil
 PEG-8 caprylic/capric glycerides
 PEG-8 laurate
 PEG-8 stearate
 PEG-15 glyceryl stearate
 PEG-25 glyceryl isostearate
 PEG-27 lanolin
 PEG-30 lanolin
 PEG-40 castor oil
 PEG-40 glyceryl stearate
 PEG-40 jojoba oil, P. lanolin
 PEG-60 glyceryl isostearate, P. g. stearate

PEG-80 jojoba oil, P. sorbitan laurate
 PEG-120 jojoba oil
 Pentasodium triphosphate
 Poloxamer 101, 122
 Polyglyceryl-2 dioleate
 Polysiloxane-polyether copolymer
 Potassium cocoyl glycinate
 Potassium cocoyl hydrolyzed collagen
 Potassium C9-15 phosphate ester
 Potassium lauroyl hydrolyzed collagen
 Potassium lauryl sulfate
 Potassium myristoyl hydrolyzed collagen
 Potassium oleoyl hydrolyzed collagen
 Potassium palmitate
 Potassium undecylenoyl hydrolyzed collagen
 PPG-2-isodeceth-4 -6 -9 -12
 PPG-6 C12-18 pareth-11
 Protein hydrolysates
 Quaternium-80
 Quillaja saponaria extract
 Raffinose laurate, R. myristate, R. oleate
 Raffinose palmitate, R. stearate
 Ricinoleamidopropyl betaine
 Silicone quaternium-1, -8, -9
 Sodium alpha olefin sulfonate
 Sodium cocoamphoacetate
 Sodium cocoyl hydrolyzed wheat protein
 Sodium cocoyl isethionate
 Sodium C12-13 sulfate
 Sodium C12-14 pareth-2 sulfate
 Sodium C12-15 pareth-3 sulfonate
 Sodium C12-15 pareth-7 carboxylate
 Sodium C12-15 pareth-7 sulfonate
 Sodium C12-15 pareth-8 carboxylate
 Sodium C12-15 pareth-15 sulfonate
 Sodium C12-18 alkyl sulfate
 Sodium C13-17 alkane sulfonate
 Sodium C14-16 olefin sulfonate
 Sodium cetecaryl sulfate
 Sodium ceryl oleyl sulfate
 Sodium coco-tallow sulfate
 Sodium cocoyl glutamate
 Sodium cocoyl hydrolyzed collagen
 Sodium cocoyl hydrolyzed soy protein
 Sodium cocoyl sarcosinate
 Sodium dimethicone copolyol acetyl methylaurate
 Sodium hydrogenated tallow glutamate
 Sodium isodecyl sulfate
 Sodium laureth-5 carboxylate
 Sodium laureth-11 carboxylate
 Sodium laureth-13-carboxylate
 Sodium laureth sulfate
 Sodium lauroamphoacetate

Sodium lauroyl glutamate
 Sodium lauroyl hydrolyzed collagen
 Sodium lauroyl sarcosinate, S. l. laurate
 Sodium magnesium laureth sulfate
 Sodium methyl cocoyl taurate
 Sodium methyl oleoyl taurate
 Sodium myristoyl glutamate
 Sodium myristoyl hydrolyzed collagen
 Sodium myristoyl sarcosinate
 Sodium myristyl sulfate
 Sodium nonoxynol-6 phosphate
 Sodium octoxynol-2 ethane sulfonate
 Sodium octyl sulfate
 Sodium oleoyl hydrolyzed collagen
 Sodium stearyl hydrolyzed collagen
 Sodium trideceth sulfate
 Sodium undecylenoyl hydrolyzed collagen
 Sodium/TEA-lauroyl hydrolyzed collagen
 Sodium/TEA-lauroyl hydrolyzed keratin
 Sorbitan isostearate
 Stearoyl sarcosine
 Sulfated castor oil
 TEA-cocoyl glutamate
 TEA-cocoyl hydrolyzed collagen
 TEA-cocoyl hydrolyzed soy protein
 TEA-C12-15 alkyl sulfate
 TEA-hydrogenated tallow glutamate
 TEA-lauroyl glutamate
 TEA-lauroyl keratin amino acids
 TEA-lauroyl sarcosinate
 TEA-lauryl sulfate
 TEA-mynstoyl hydrolyzed collagen
 Tocophereth-5 -10 -18 -20 -30 -50 -70
 Trideceth-7 carboxylic acid
 Trideceth-9
 Trideceth-19-carboxylic acid
 Tridecyl ethoxylate
 Triethanolamine C10-14 sulfate
 Trilauryl phosphate
 Wheat germamidopropyl betaine
 Yucca vera extract

Suspending agent

Acrylates/ceteth-20 methacrylates copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Algin
 Bentonite
 C10 polycarbonyl polyglycol ester
 Calcium alginate
 Carbomer, C. 934
 Carrageenan (Chondrus crispus)
 Cellulose gum
 Ceryl hydroxyethylcellulose

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Functions

Dihydrogenated tallow phthalic acid amide	Calcium alginate	MDM hydantoin
Diisocetyl phthalic acid amide	Calcium carrageenan	Methylcellulose
Guar (Cyanopsis tetragonoloba) gum	Caprylic alcohol	Montmorillonite
Hectonite	Carbomer	Mynstamide DEA, M. MEA
Hydroxypropylcellulose	Carboxymethyl hydroxyethylcellulose	Mynstamine oxide
Isobutylene/MA copolymer	Carrageenan (Chondrus crispus)	Mynstyl alcohol
Magnesium aluminum silicate	Cellulose, C. gum	Octacosanyl stearate
Methylcellulose	Cetearyl alcohol, C. behenate	Oleamide, O. DEA, O. MEA
Pentaoctadecyl phosphate	Cetearyl octanoate, C. stearate	Palmitamide MEA
Polyethylene, P. micronized	Cetostearyl stearate	Pectin
Propylene glycol alginate	Cetyl alcohol	PEG-2 laurate
Quaternium-18 bentonite	Cetyl hydroxyethylcellulose	PEG-3 distearate, P. lauramide
Quaternium-18 hectonite	Cetyl myristate, C. palmitate	PEG-3 lauramine oxide
Sodium magnesium silicate	Cocamide	PEG-4 diisostearate, P. oleamide
Sodium polynaphthalenesulfonate	Cocamide MEA, C. MIPA	PEG-5M
Stearalkonium bentonite, S. hectonite	Cocamidopropylamine oxide	PEG-6 beeswax
Steareth-10 allyl ether/acrylates copolymer	Coco-betaine	PEG-7 hydrogenated castor oil
Tragacanth (Astragalus gummifer) gum	Coco-rape seedate	PEG-8
Tribehenin	Coco/oleamidopropyl betaine	PEG-8 dioleate, P. distearate
Trihydroxystearin	Cocoyl amido hydroxy sulfo betaine	PEG-8 stearate
Tromethamine magnesium aluminum silicate	Cocoyl monoethanolamide ethoxylate	PEG-9M
Xanthan gum	Colloidal silica sols	PEG-12 beeswax
	DEA-hydrolyzed lecithin	PEG-18 glyceryl oleate/cocotate
	DEA-linoleate	PEG-23M
	DEA-oleth-3 phosphate	PEG-28 glyceryl tallowate
	DEA oleth-10 phosphate	PEG-40 jojoba oil
	Decyl alcohol	PEG-45M
	Dextran	PEG-50 tallow amide
	Dextrin	PEG-55 propylene glycol oleate
	Dilaureth-10 phosphate	PEG-75 stearate
	Dioleth-8 phosphate	PEG-90M
	DMHF	PEG-100 stearate
	Ethoxylated fatty alcohol	PEG-120 methyl glucose dioleate
	Gellan gum	PEG-150 distearate
	Glycerol behenate, G. stearate	PEG-150 pentaerythrityl tetrastearate
	Glycerol polymethacrylate	PEG-160M
	Guar (Cyanopsis tetragonoloba) gum	PEG-200 glyceryl stearate
	Guar hydroxypropyltrimonium chloride	PEG-200 glyceryl tallowate
	Hectonite	Pentaerythrityl tetra behenate
	Hexyl alcohol	Pentaerythrityl tetrastearate
	Hydrated silica	Poloxamer 105, 124, 185, 237, 238, 338, 407
	Hydrogenated rapeseed oil	Polyacrylic acid
	Hydrogenated starch hydrolysate	Polysorbate 20
	Hydrogenated talloweth-60 myristyl glycol	Potassium alginate, P. chloride
	Hydrolyzed oat flour	Potassium oleate, P. stearate
	Hydrolyzed transgenic collagen	PPG-5-ceteth-10 phosphate
	Hydroxyethylcellulose	Propylene glycol stearate
	Hydroxypropyl chitosan	PVM/MA decadiene crosspolymer
	Hydroxypropyl guar	PVP
	Hydroxypropyl methylcellulose	Quaternium-18 bentonite
	Hydroxypropylcellulose	Quaternium-18 hectonite
	Isoceteth-10	Rapeseed oil, ethoxylated high erucic acid
	Isocetamide DEA	Ricinoleamide MEA
	Isocetamidopropylamine oxide	Sesamide DEA
	Isocetamphopropionate	Sodium acrylates/vinyl isodecanoate crosspolymer
	Japote wax	Sodium carbomer, S. carrageenan
	Kappa (Sterculia urens) gum	Sodium ceteth-13-carboxylate
	Lauramide DEA, L. MEA, L. MIPA	Sodium chloride
	Lauramidopropyl betaine	Sodium magnesium silicate, S. stearate
	Laureth-10	Sorbitan sesquiosostearate, S. tristearate
	Lauryl-linoleic DEA	Soyamide DEA
	Lauryl-linoleoyl diethanolamide	Soyamidopropyl betaine
	Lauryl-myristoyl diethanolamide	Starch polyacrylonitrile copolymer-potassium salt
	Lauryl alcohol, L. betaine	Starch polyacrylonitrile copolymer-sodium salt
	Lauramide DEA, L. MEA	Stearalkonium bentonite, S. hectonite
	Lecithic acid	Stearamide
	Lecithic acid	Stearamide DEA, S. MEA, S. MEA-stearate
	Lecithic bean (Ceratonia siliqua) gum	Stearamidopropyl dimethylamine lactate
	Magnesium aluminum silicate	Stearamine oxide

Sweetener

Calcium saccharin
Fructose
Glycyrrhizic acid
Glycyrrhizic acid
Glycyrrhizin, ammoniated
Hydrolyzed corn starch
Lactose
Maltitol
Mannitol
Saccharin
Sodium saccharin
Sorbitol
Sucrose

Tanning accelerator

Acetyl tyrosine
Carrot (Daucus carota) extract
Copper acetyl tyrosinate methylsilanol
Dihydroxyacetone
Disodium methyl tyrosinate
Eclipta alba extract in white emulsion
Glucose tyrosinate

Thickener

Acrylates-VA crosspolymer
Acrylates/C10-C30 alkyl acrylate crosspolymer
Acrylate/ceteth-20 itaconate copolymer
Acrylate/ceteth-20 methacrylates copolymer
Acrylate/steareth-20 itaconate copolymer
Acrylate/steareth-20 methacrylate copolymer
Acrylate/steareth-50 acrylate copolymer
Acrylate/vinyl isodecanoate crosspolymer
Acrylic acid/acrylonitril copolymer
Algin
Aluminum/magnesium hydroxide stearate
Ammonium acrylates/acrylonitril copolymer
Ammonium alginate
Arachidyl alcohol
Behenic acid
Behenyl alcohol, B. behenate
Bentonite
C10 polycarbonyl polyglycol ester
C12-15 alcohols
C12-16 alcohols
C18-36 acid

3 BETTER IDEAS.**1 BETTER SOURCE.**

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Functions

Steareth-10 allyl ether/acrylates copolymer
 Stearic acid
 Stearyl alcohol
 Synthetic beeswax
 Tallowamide MEA
 TEA-acrylates/acrylonitril copolymer
 Tragacanth (*Astragalus gummifer*) gum
 Triphenin
 Trihydroxystearin
 Tromethamine magnesium aluminum silicate
 Wheat germamide DEA
 Wheat germamidopropyl betaine
 Xanthan gum

Thixotrope

Bentonite
 Hectonite
 Sodium magnesium silicate
 Stearalkonium bentonite

Toner

Althea officinalis extract
 Clover (*Trifolium pratense*) extract
 Dog rose (*Rosa canina*) hips extract
 Ginseng (*Panax ginseng*) extract
 Horsetail extract
 Lemon bioflavonoids extract
 Meadowsweet (*Spiraea ulmaria*) extract
 Nettle (*Urtica dioica*) extract
 Rose (*Rosa multiflora*) extract
 Rosemary (*Rosmarinus officinalis*) extract

UVA absorber

Benzophenone-1, -2, -3, -4, -6, -8, -9, -11, -12
 Butyl methoxydibenzoylmethane
 Corallina officinalis
 Isopropyl dibenzoylmethane
 Menthyl anthranilate
 2,2',4,4'-Tetrahydroxybenzophenone
 Titanium dioxide
 Zinc oxide

UVB absorber

Argania spinosa oil
 Benzophenone-1 -2 -3 -4 -6 -9 -11
 Corallina officinalis
 DEA-methoxycinnamate
 Drometrizole
 Ethyl dihydroxypropyl PABA
 Etoacrylene
 Homosalate
 Isoamyl p-methoxycinnamate
 Isopropyl methoxycinnamate
 Isopropylbenzyl salicylate
 4-Methylbenzylidene camphor
 Octocrylene
 Octinoxate
 Octyl dimethyl PABA
 Octyl methoxycinnamate
 Octyl salicylate, O, triazone
 PABA
 PEG-25 PABA
 Phenylbenzimidazole sulfonic acid
 Shea butter, ethoxylated
 TEA-salicylate
 Titanium dioxide
 TriPABA panthenol
 Zinc oxide

Vegetable oil

Apricot (*Prunus armeniaca*) kernel oil
 Avocado (*Persea gratissima*) oil
 Baobab oil
Calendula officinalis oil
 Chaulmoogra (*Toraktoegenos kurzii*) oil
 Coconut (*Cocos nucifera*) oil
 Corn (*Zea mays*) oil
 Cottonseed (*Gossypium*) oil

Gold of pleasure oil
 Grape (*Vitis vinifera*) seed oil
 Hazel (*Corylus avellana*) nut oil
 Hybrid sunflower (*Helianthus annuus*) oil
 Hydrogenated coconut oil
 Hydrogenated cottonseed oil
 Hydrogenated vegetable oil
 Jojoba (*Buxus chinensis*) oil
 Kukui (*Aleurites moluccana*) nut oil
 Macadamia ternifolia nut oil
 Meadowfoam (*Limnanthes alba*) seed oil
 Mexican poppy oil
 Palm (*Elaeis guineensis*) kernel oil
 Partially hydrogenated soybean oil
 Peach (*Prunus persica*) kernel oil
 Peanut (*Arachis hypogaea*) oil
 Pecan (*Carya illinoensis*) oil
 Pumpkin (*Cucurbita pepo*) seed oil
 Quinoa (*Chenopodium quinoa*) oil
 Rapeseed (*Brassica campestris*) oil
 Rice (*Oryza sativa*) bran oil
 Safflower (*Carthamus tinctorius*) oil
 Seabuckthorn oil
 Sesame (*Sesamum indicum*) oil
 Sisymbrium irio oil
 Soybean (*Glycine soja*) oil
 Sunflower (*Helianthus annuus*) seed oil
 Walnut (*Juglans regia*) oil
 Wheat (*Triticum vulgare*) germ oil
 Wild borage oil

Vitamin

Aesculus chinensis extract
 Ascorbic acid
 Ascorbic acid polypeptide
 Ascorbyl palmitate
 Biotin
 Calcium pantothenate
 Cholecalciferol
 Cyanocobalamin
 Eclipta alba extract
 Emblica officinalis extract
 Equisetum arvense extract
 Ergocalciferol
 Esculin
 Ethyl linoleate
 Folic acid
 Laminaria japonica extract
 Marsilea minima extract
 Melaleuca bracteata extract
 Menadiol
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Niacin
 Niacinamide, N, ascorbate
 Nicotinamide
 Nicotinic acid
 Ocimum basilicum extract
 Panthenyl triacetate
 Pantothenic acid
 Phytonadione
 Pyridoxine HCl
 Retinol
 Retinyl acetate, R, palmitate
 Retinyl palmitate polypeptide
 Retinyl propionate
 Riboflavin tetraacetate
 Sodium ascorbate
 Thiamine HCl
 Tocopherol
 Tocopheryl acetate, T, succinate

Wax

Bayberry (*Myrica cerifera*) wax
 Behenoxymethicone
 C16-18 alkyl methicone
 Candelilla (*Euphorbia cerifera*) wax
 Carnauba (*Copernicia cerifera*) wax

Ceresin

Cetyl dimethicone, C, isooctanoate
 Dialkyldimethylpolysiloxane
 Dimethiconol hydroxystearate
 Dimethiconol stearate
 Hydrogenated castor oil
 Hydrogenated cottonseed oil
 Hydrogenated jojoba oil, H, j, wax
 Hydrogenated palm kernel oil
 Hydrogenated rapeseed oil
 Hydrogenated rice bran wax
 Hydrogenated vegetable oil
 Isooctadecyl isononanoate
 Japan (*Rhus succedanea*) wax
 Jojoba esters
 Montan (*Montan cera*) wax
 Ouricury wax
 Ozokerite
 Polyglyceryl-3 beeswax
 Spermaceti
 Stearoxymethicone/dimethicone copolymer
 Stearoxymethylsilane
 Synthetic candelilla wax
 Synthetic carnauba

Wetting agent

Benzalkonium chloride
 Benzethonium chloride
 Cetalkonium chloride
 Ceteareth-20
 Ceteth-20
 Cetyl pyridinium chloride
 Cocoamphodipropionic acid
 Decaglycerol monododecylate
 Deceth-9
 Dihydroabietyl methacrylate
 Dimethicone copolyol methyl ether
 Dimethicone copolyol phthalate
 Dioctyl sodium sulfosuccinate
 Ethyl hydroxymethyl oleyl oxazoline
 Hydroxylated milk glycerides
 Isolaureth-6
 Lanolin acid
 Lauryl pyrrolidone
 Lecithin
 Methyl hydrogenated rosinate
 Methyl rosinate
 Nonyl nonoxynol-5
 Octoxynol-8, 70
 Oleth-15
 Oleth-20 phosphate
 PEG-9 castor oil
 PEG-15 castor oil
 PEG-20 glyceryl stearate
 PEG-20 sorbitan triisostearate
 PEG-45 palm kernel glycerides
 PEG-60 almond glycerides, P, com glycerides
 PEG-60 shea butter glycerides
 PEG-70 mango glycerides
 PEG-75 shorea butter glycerides
 PEG-80 sorbitan laurate
 Poloxamer 123, 181, 182, 184, 235, 334
 Polyether trisiloxane
 Polyglyceryl-3 oleate
 Polyglyceryl-6 dioleate
 Polyglyceryl-10 tetraoleate
 Polysorbate 60, 80
 PPG-2-isodeceth-4, -6, -9, -12
 PPG-10 lanolin alcohol ether
 Propylene glycol
 Sodium butoxyethoxy acetate
 Sodium capryloamphohydroxypropylsulfonate
 Sodium decyl diphenyl ether sulfonate
 Sodium dodecyl diphenyl ether sulfonate
 Sodium lauryl sulfate
 Sulfated castor oil
 Triisocetyl citrate
 Triisostearin PEG-6 esters
 Yucca vera extract

Claims:

1. A cosmetic composition, comprising:

5 a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component randomly bonded to at least one poly(acrylic acid) component said polymer network capable of aggregation in response to a change in temperature; and

a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.

2. A cosmetic composition for topical application, comprising:

10 a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and

15 a cosmetically active agent selected to treat imperfections or disorders of the skin, said carrier and said agent disposed within an aqueous-based medium.

3. The cosmetic composition of claim 1, wherein the cosmetic composition is a shampoo and the cosmetically active agent comprises a cleansing surfactant.

20 4. The cosmetic composition of claim 1, wherein the cosmetic composition is a moisturizer and the cosmetically active agent comprises a moisturizer.

25 5. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunscreen and the cosmetically active agent comprises a uv-absorbing agent.

6. The cosmetic composition of claim 1, wherein the cosmetic composition is an acne cream and the cosmetically active agent comprises an antiacne agent.

5 7. The cosmetic composition of claim 1, wherein the cosmetic composition is a hair straightener and the cosmetic agent comprises a base for increasing the pH.

10 8. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunless tanning lotion and the cosmetically active agent comprises skin tinting agent.

15 9. The cosmetic composition of claim 1, wherein the cosmetic composition is an antiperspirant and the cosmetically active agent comprises aluminum chlorhydrate.

20 10. The cosmetic composition of claim 1, wherein the cosmetic composition is a shaving cream and the cosmetically active agent comprises an emollient and a foaming surfactant.

11. The cosmetic composition of claim 1, wherein the cosmetic composition is a face cosmetic and the cosmetically active agent comprises a pigment.

25 12. The cosmetic composition of claim 1 or 2, wherein the cosmetic agent comprises a hydrophobic material, wherein the cosmetically acceptable carrier stabilizes the hydrophobic material in the aqueous medium.

13. The cosmetic composition of claim 2, wherein said cosmetic agent selected to treat imperfections or disorders of the skin is selected from the group consisting of acidulents, antiacne agents, anti-aging agents, anti-inflammatories, anti-irritants, antioxidants, depilatories, detergents, disinfectants, emollients, exfoliants, humectants, lubricants, moisturizers, skin conditioners, skin protectants, skin lightening agents, skin soothing agents, sunscreens, tanning accelerators and mixtures thereof.

14. The composition of claim 4, wherein said composition further comprises a cosmetic agent selected from the group consisting of humectants and emollients.

15. The composition of claim 1 or 2, further comprising one or more additives selected from the group consisting of preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, astringents, antiperspirants, antiseptics, antistatic agents, antrngents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents, conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators, thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances

16. The composition of claim 1, wherein the cosmetic composition takes a form selected from the group consisting of lotions, creams, sticks, roll-on formulations, mousses, sprays, aerosols, pad-applied formulations and masks.

5 17. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 27 to 40°C.

18. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 30 to 37°C.

10 19. The composition of claim 1, wherein said composition is formulated as a product selected from the group consisting of baby products, baby shampoos, lotions, powders and creams; bath preparations, bath oils, tablets and salts, bubble baths, bath fragrances bath capsules; eye makeup preparations, eyebrow pencil,
15 eyeliner, eye shadow, eye lotion, eye makeup remover, mascara; fragrance preparations, colognes, toilet waters, powders and sachets; noncoloring hair preparations, hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics: hair coloring preparations, hair dye, hair tints, hair color sprays, hair lighteners and hair bleaches;
20 makeup preparations, face powders, foundations, leg and body paints, lipstick makeup bases, rouges and makeup fixatives; manicuring preparations, basecoats, undercoats, cuticle softeners, nail creams, nail extenders, nail polish and enamel, and remover; oral hygiene products, dentrifices, mouthwashes; personal cleanliness, bath soaps, detergents, deodorants, douches and feminine hygiene product; shaving preparations,
25 aftershave lotion, beard softeners, men's talcum, shaving cream, shaving soap, preshave lotions; skin care preparations, skin cleansing preparations, skin antiseptics, depilatories, face and neck cleansers, body and hand cleansers, foot powders; moisturizers, night preparations, paste masks, skin fresheners; and suntan preparations, suntan creams, gels and lotions, and indoor tanning preparations.

20. The cosmetic composition of claim 1 or 2, wherein the poloxamer component is present in an amount in the range of about 0.01 to 20 wt% and the poly(acrylic acid component) is present in the amount of about 0.01 to 20 wt%.

5 21. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamers.

22. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamer components randomly bonded to a poly(acrylic
10 acid) backbone.

23. The cosmetic composition of claim 1, wherein the reversibly viscosifying polymer composition comprises a plurality of poly(acrylic acid) components randomly bonded to a poloxamer component.
15

24. The cosmetic composition of claim 1, wherein the aqueous-based medium is selected from the group consisting of water, salt solutions and water with water-miscible organic compound(s).

20 25. The cosmetic composition of claim 1, further comprising an additive selected to increase transition temperature and increase viscosity of the reversible viscosifying polymer network.

26. The cosmetic composition of claim 1, further comprising an additive
25 selected to increase transition temperature and decrease viscosity of the reversible viscosifying polymer network.

27. The cosmetic composition of claim 1, further comprising an additive selected to increase transition temperature without affecting viscosity of the reversible viscosifying polymer network..

5 28. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature and increase viscosity of the reversible viscosifying polymer network.

10 29. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature and decrease viscosity of the reversible viscosifying polymer network.

15 30. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature without affecting viscosity of the reversible viscosifying polymer network.

20 31. The cosmetic composition of claim 1, further comprising an additive selected to increase viscosity without affecting transition temperature of the reversible viscosifying polymer network.

32. The cosmetic composition of claim 1, further comprising an additive selected to decrease viscosity without affecting transition temperature of the reversible viscosifying polymer network.

25 33. The cosmetic composition of claim 1 or 2, characterized in that the gel remains translucent to light before and after response to the environmental stimulus.

34. The cosmetic composition of claim 1, wherein the poly(acrylic acid) is branched.

35. Method of making an cosmetic composition, comprising:

5 dissolving a poloxamer capable of aggregation in response to a change in temperature in acrylic acid monomer;

initiating polymerization of the monomer to form a poly(acrylic acid) randomly bonded to the poloxamer, so as to form a reversibly viscosifying polymer composition;

10 mixing the reversibly gelling polymer compositions with a cosmetic agent which imparts a desired cosmetic effect to the composition.

36. The method of claim 36, wherein a polymerization initiator is selected to provide the polymer network having a selected temperature of viscosification.

15 37. The method of claim 36, wherein one or more poloxamers are added.

38. The cosmetic composition of claim 1, wherein the reversibly viscosifying polymer network is present in an amount in the range of 0.01% 10%.

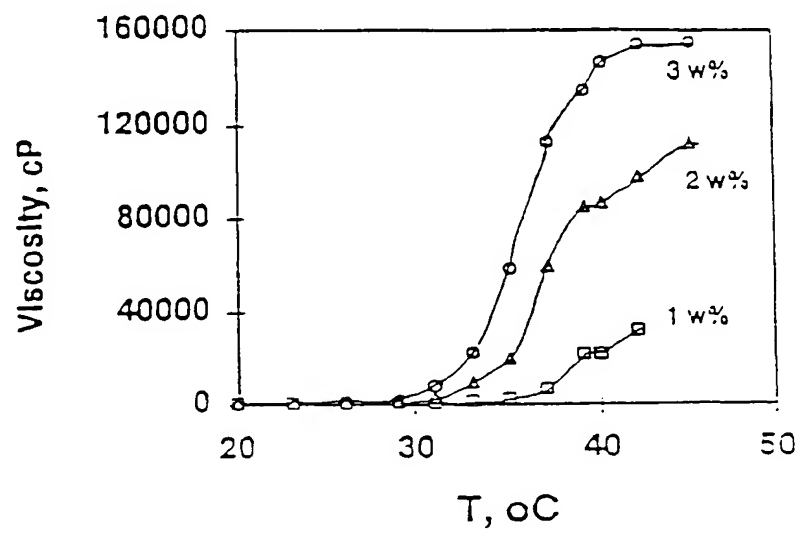


Figure 1.

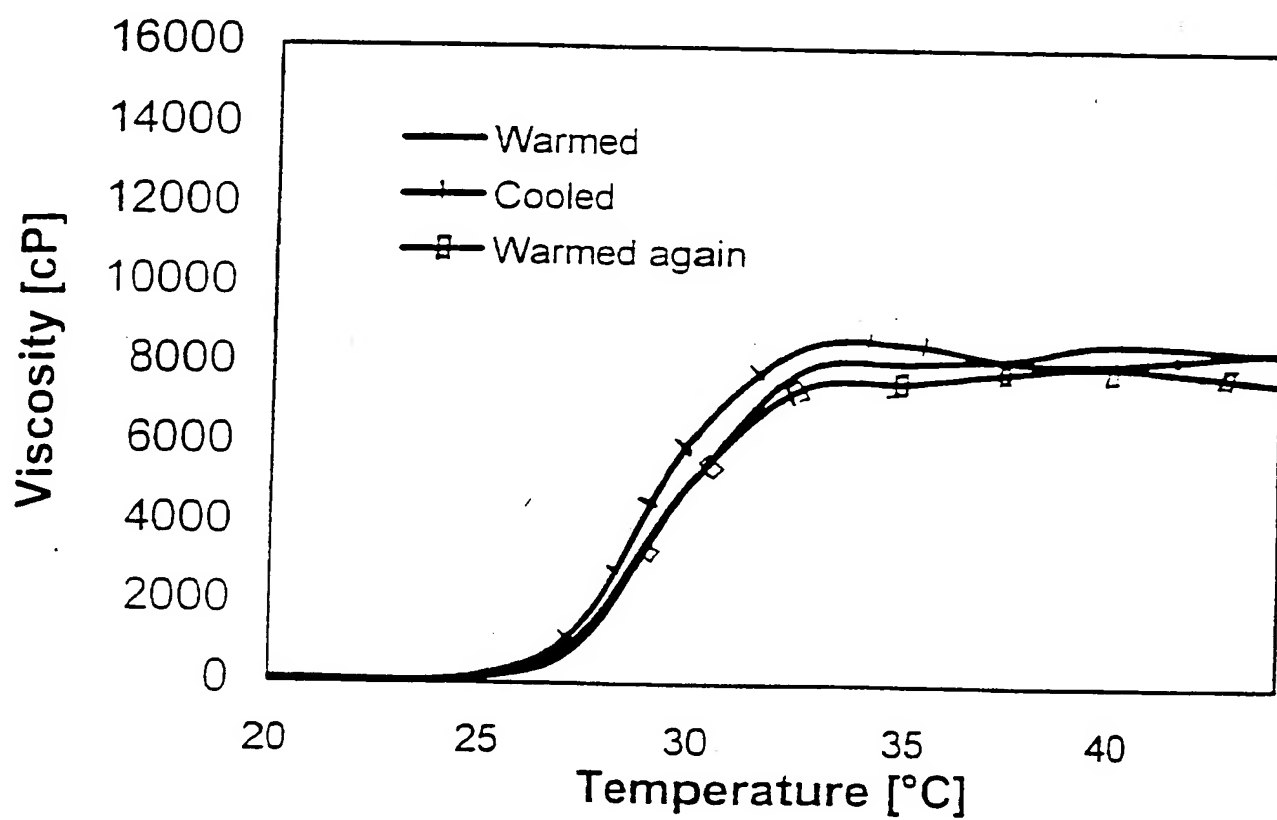


Figure 2

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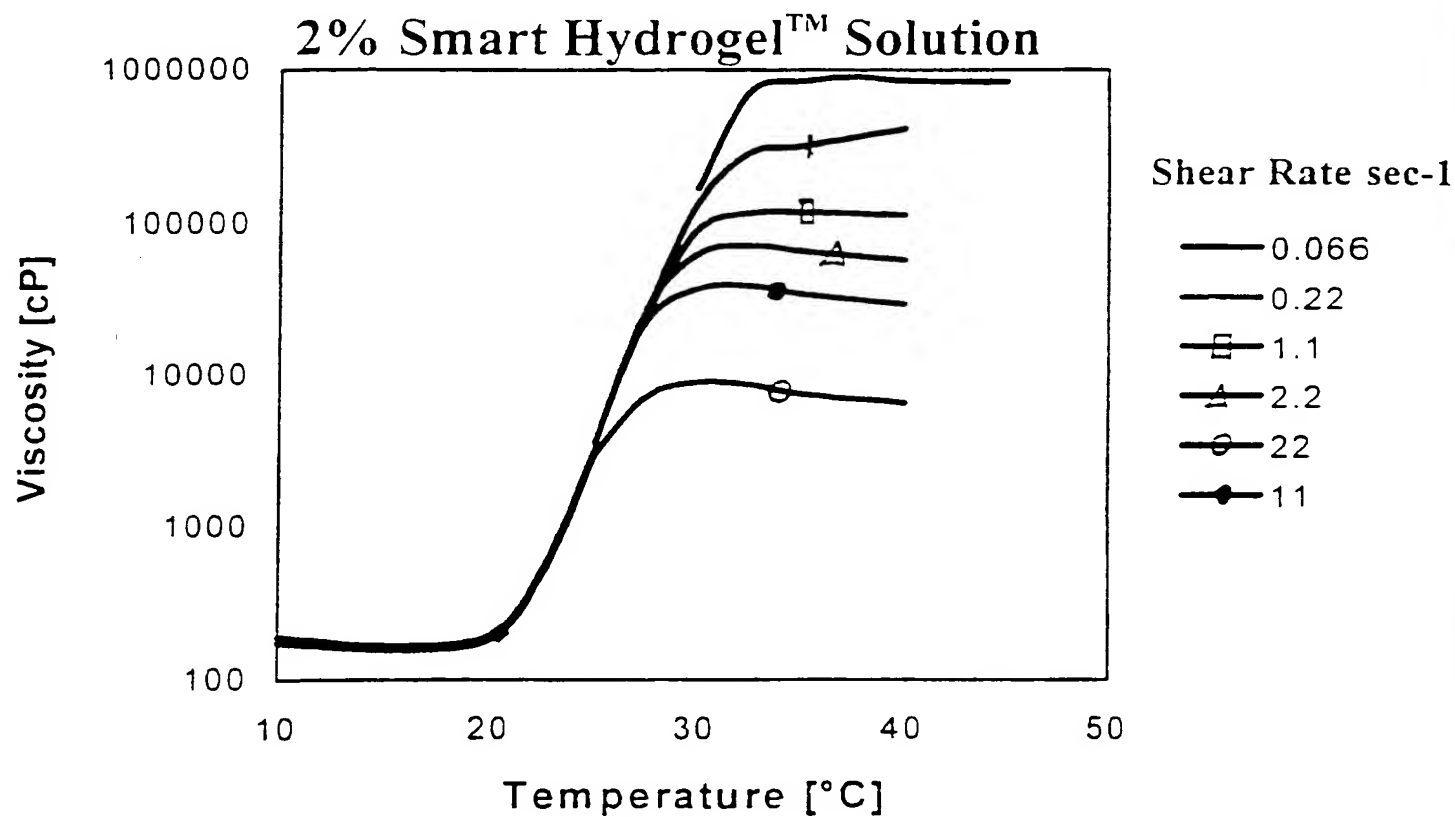


Figure 3

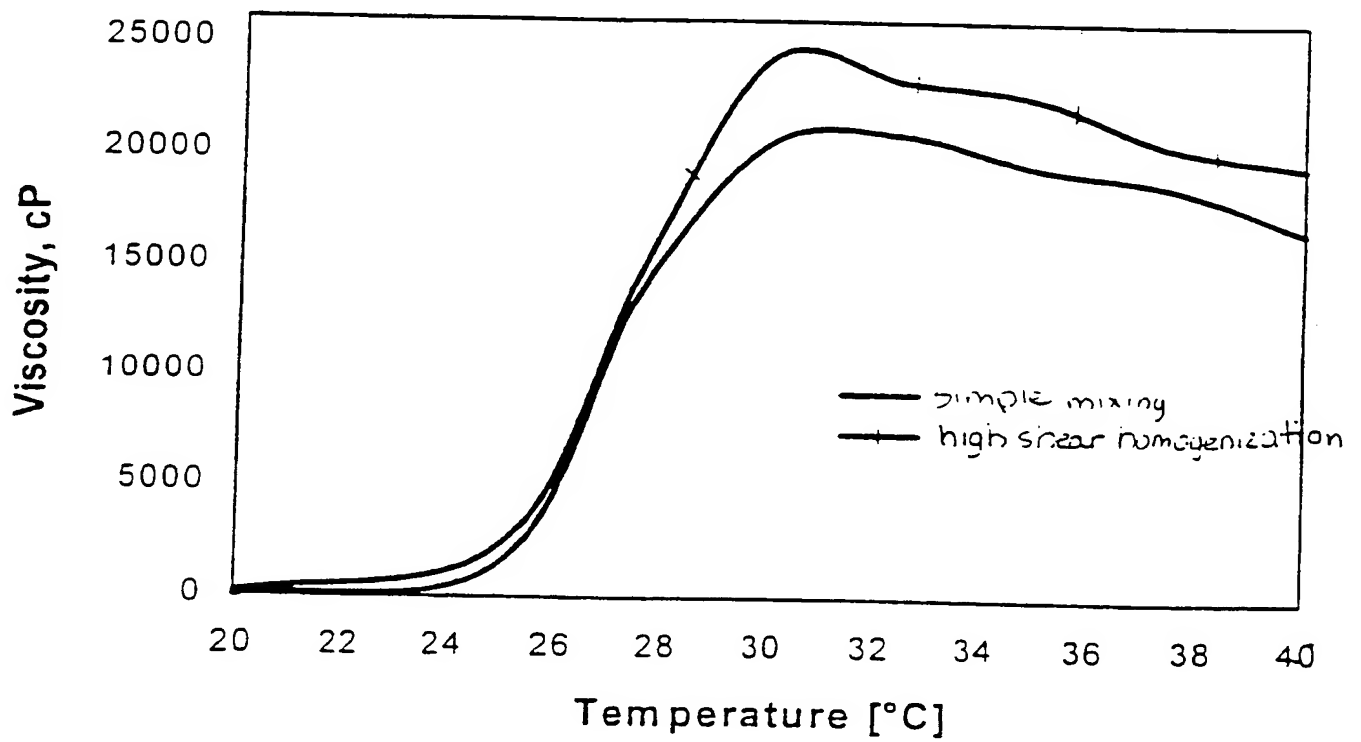


Figure 4

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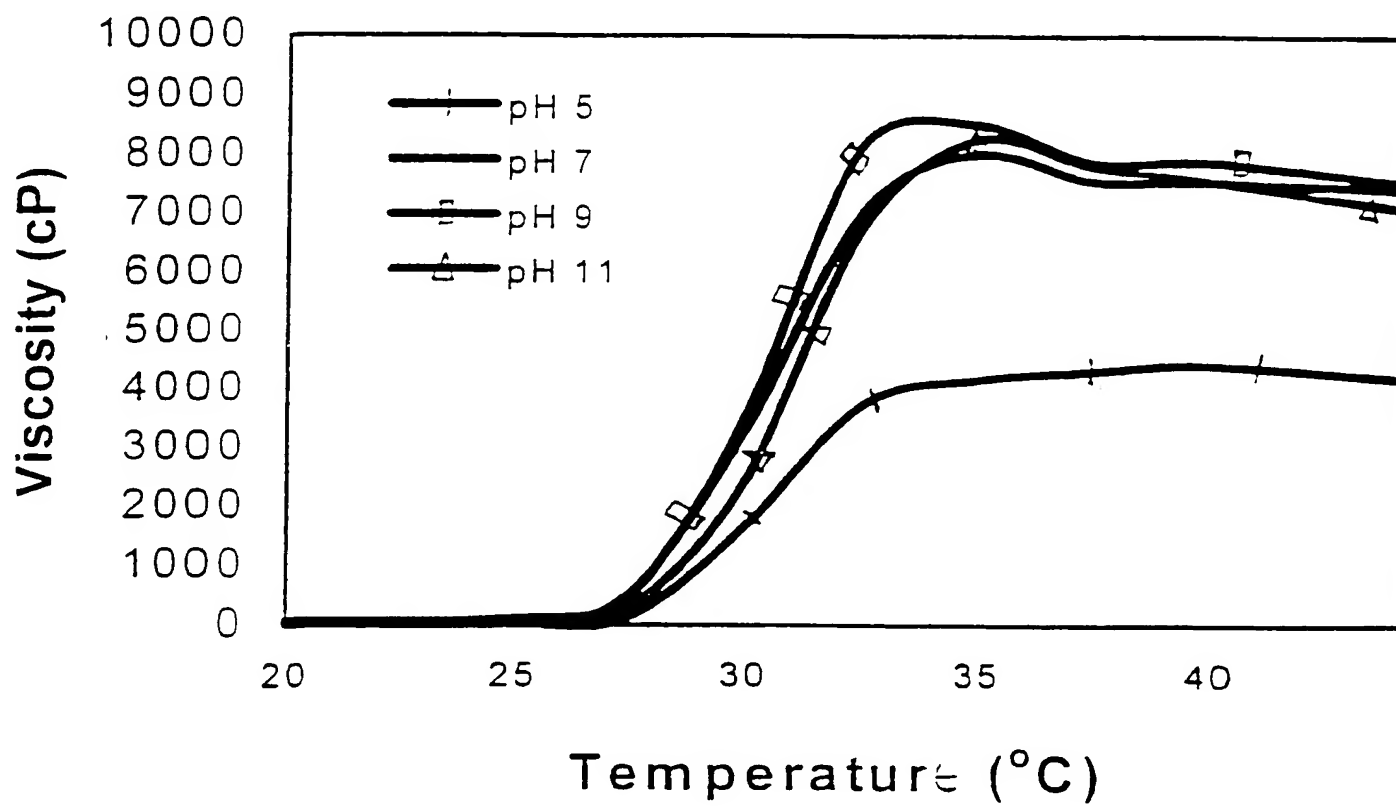


Figure 5

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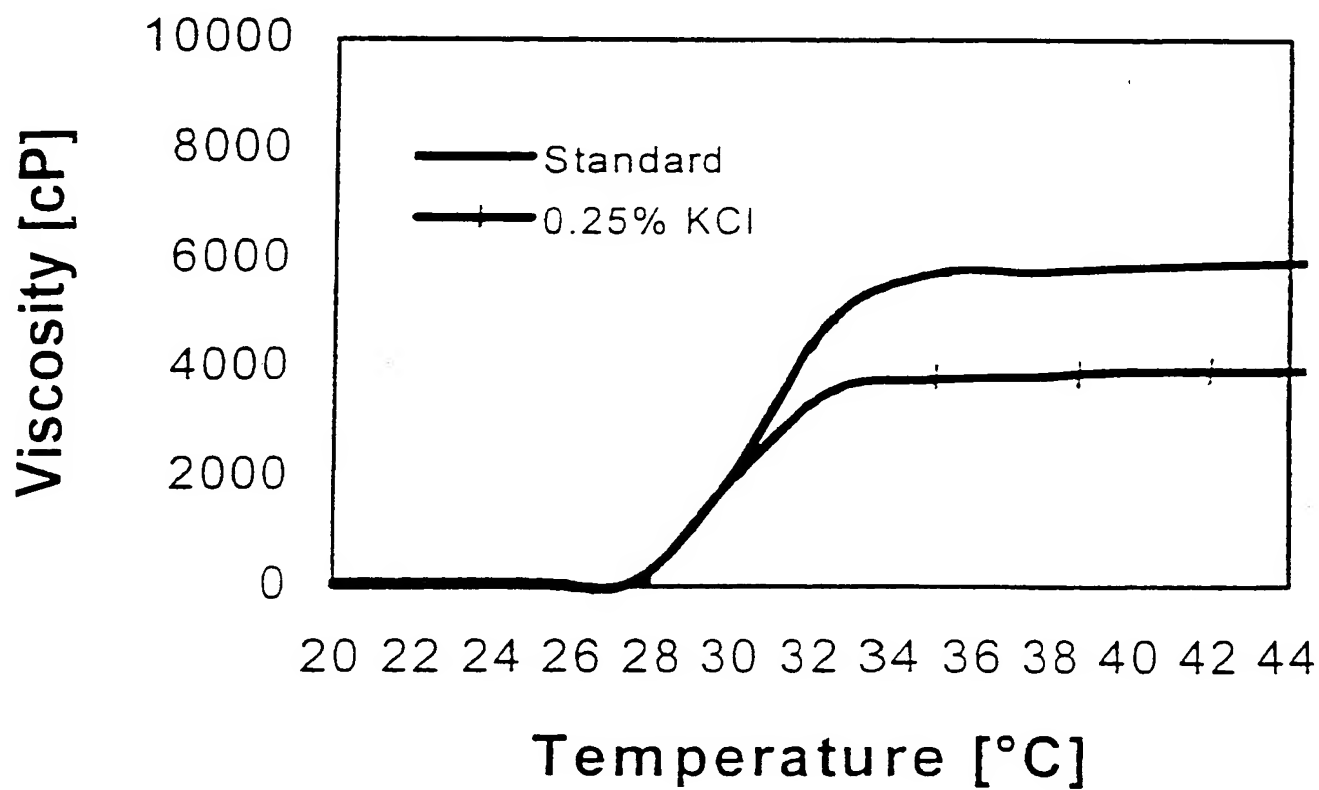


Figure 6

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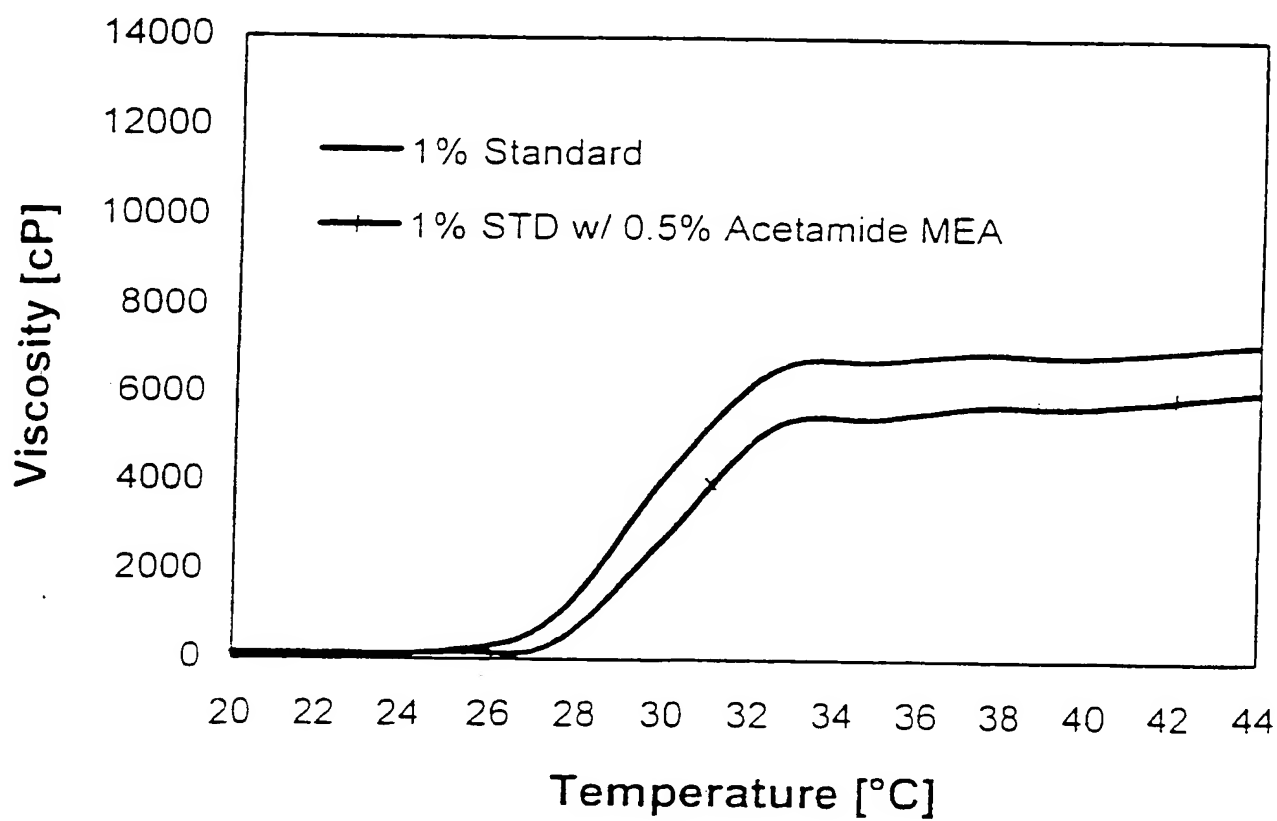


Figure 7

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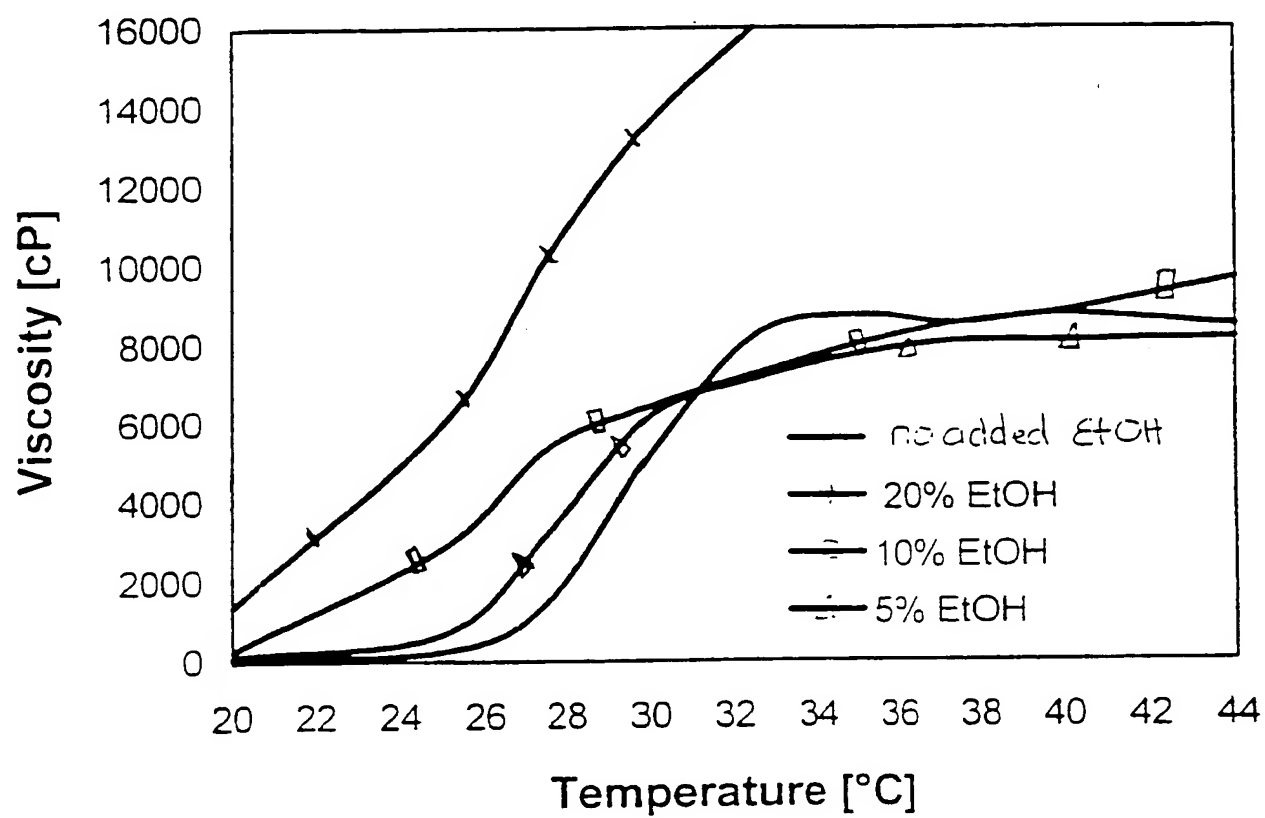


Figure 8

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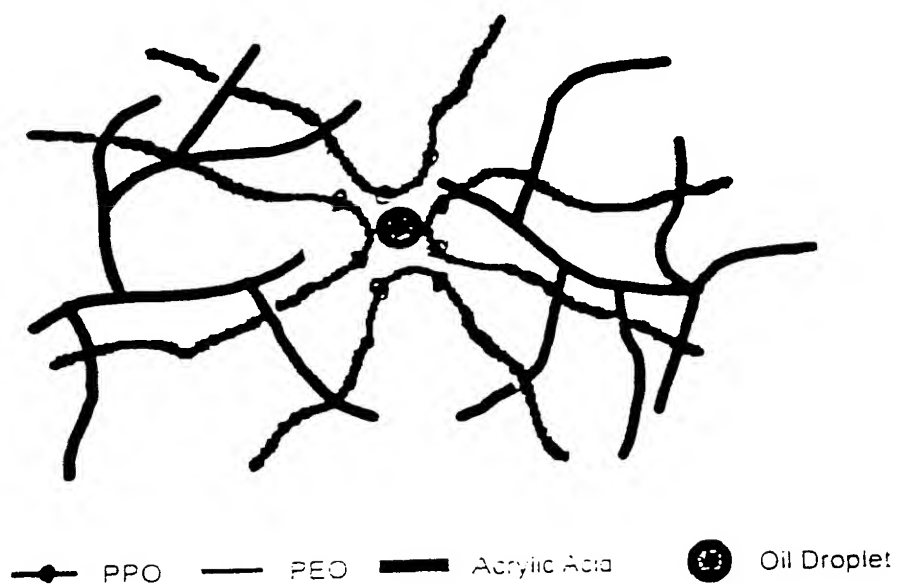
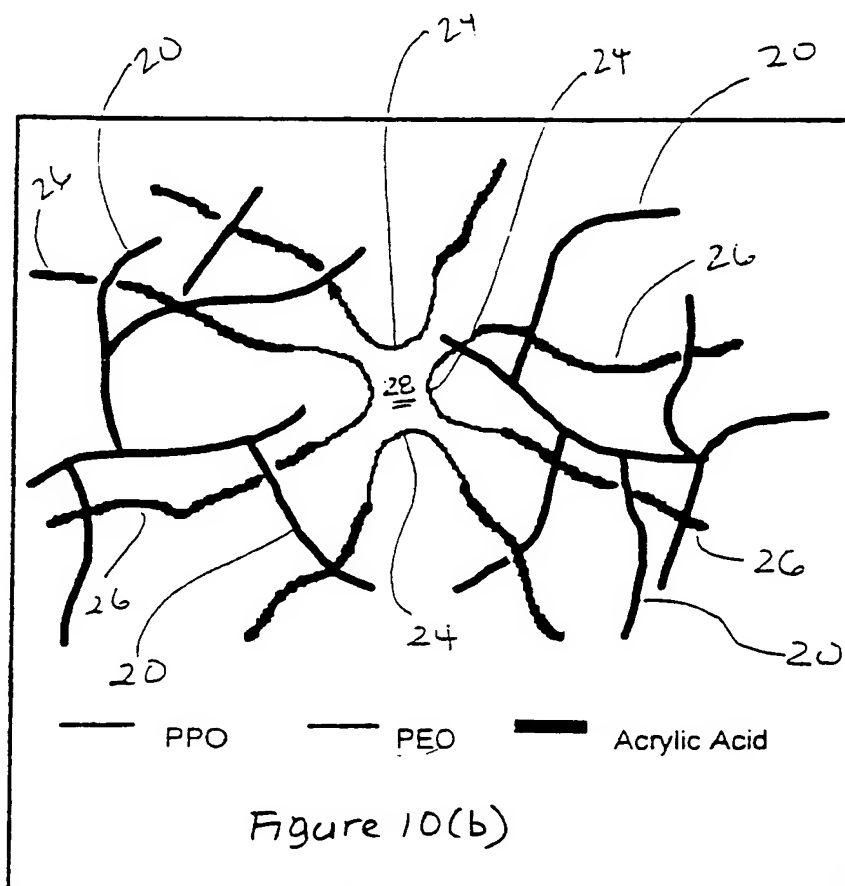
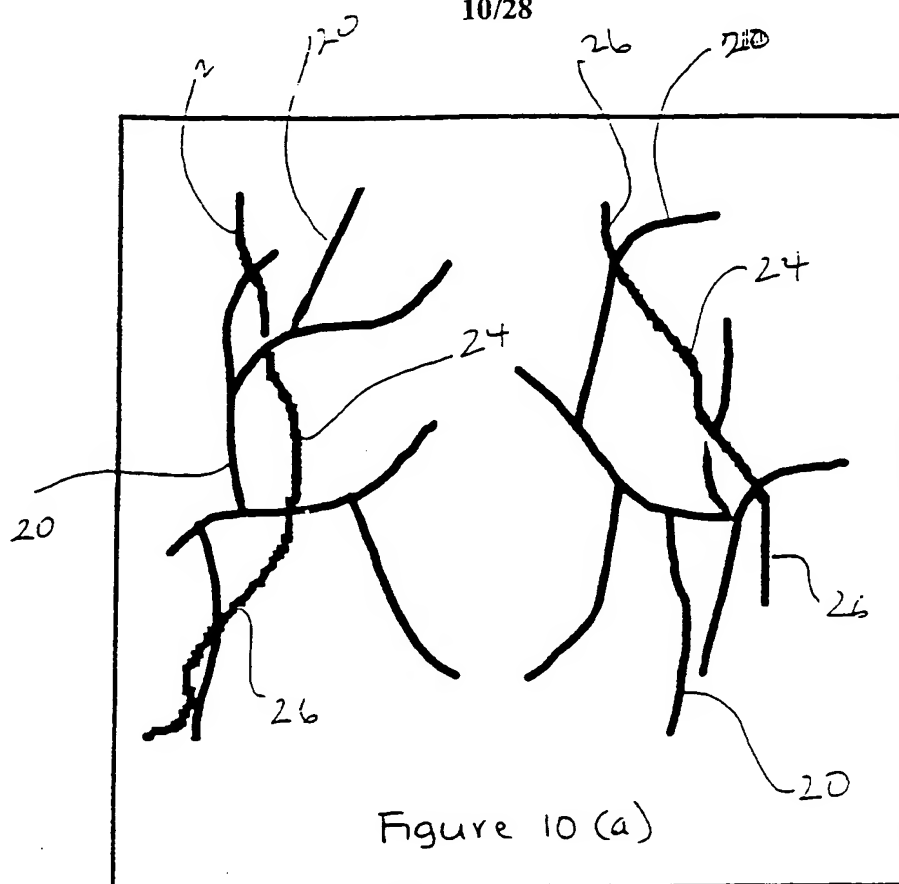


Figure 9

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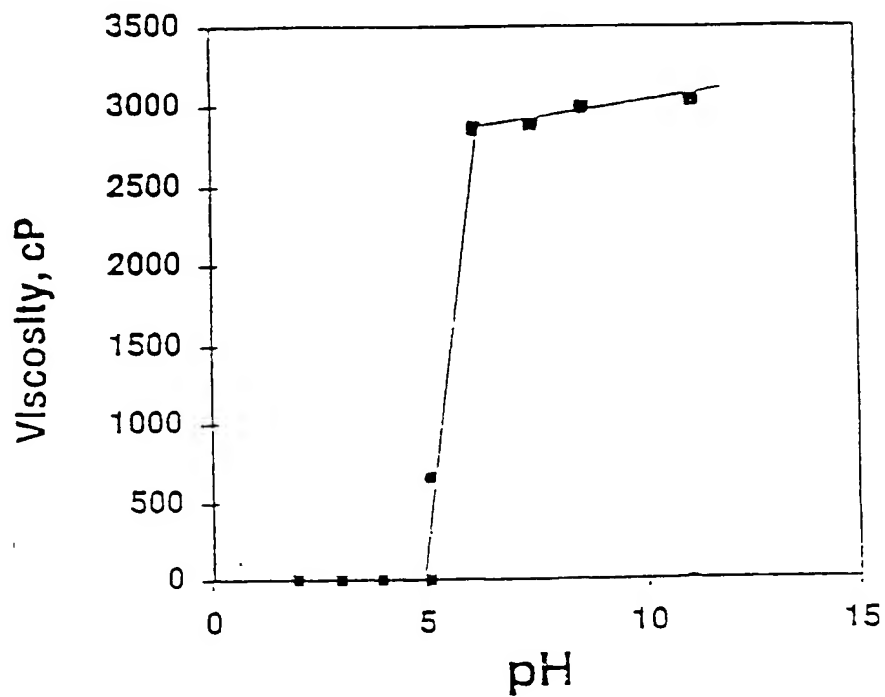


Figure 11

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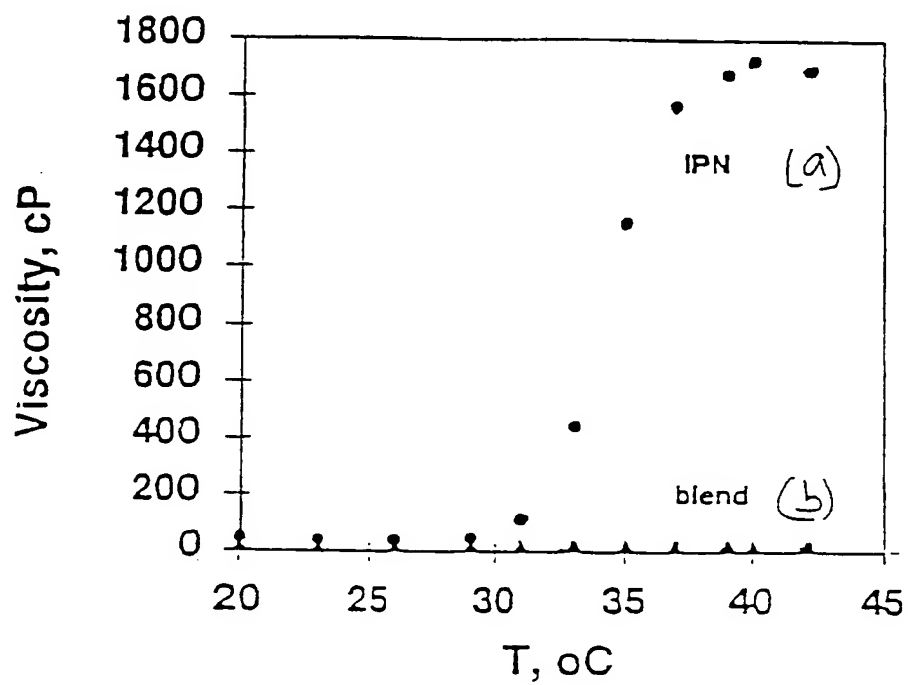


Figure 12

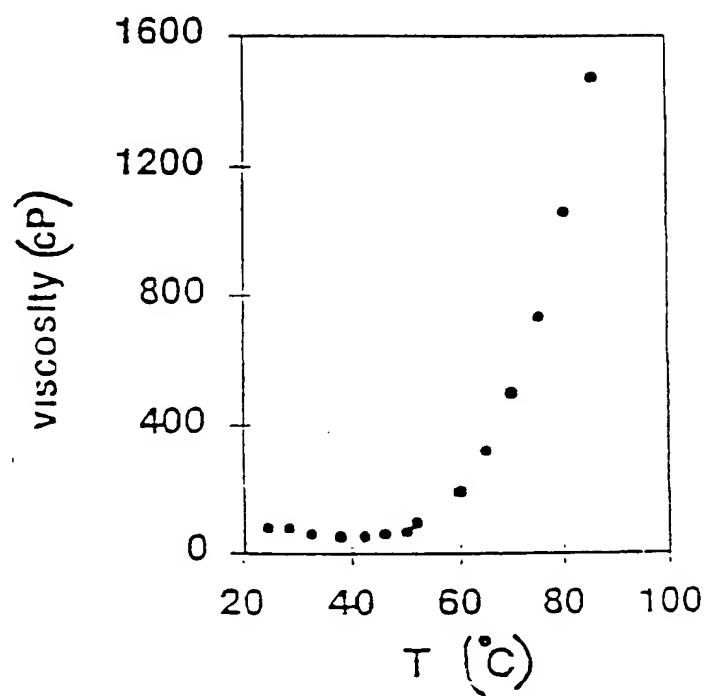


Figure 13

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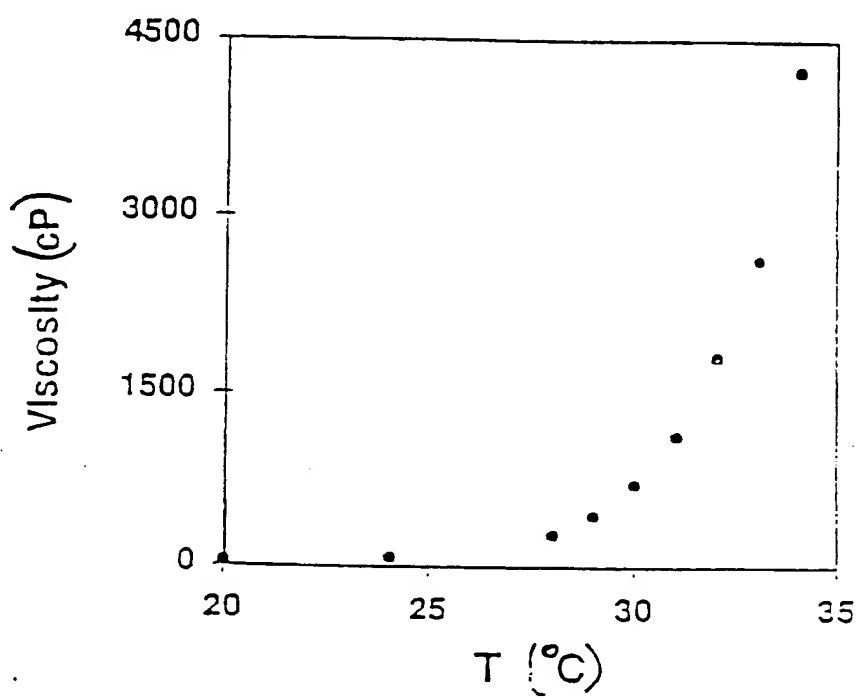


Figure 14

15/28

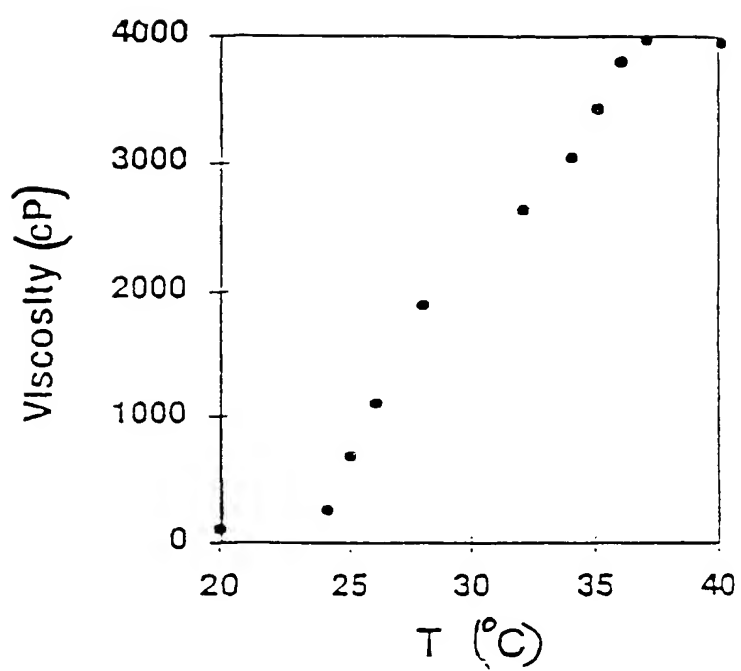


Figure 15

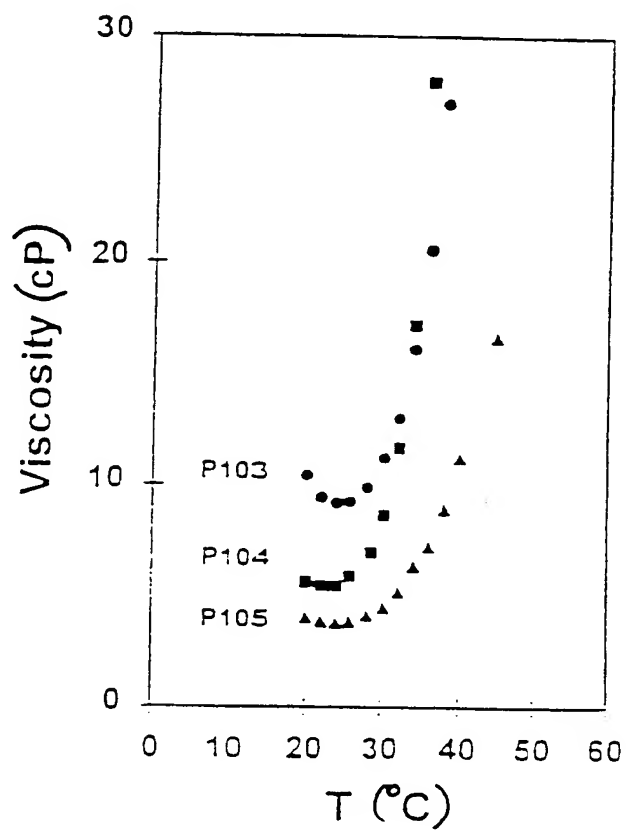


Figure 16

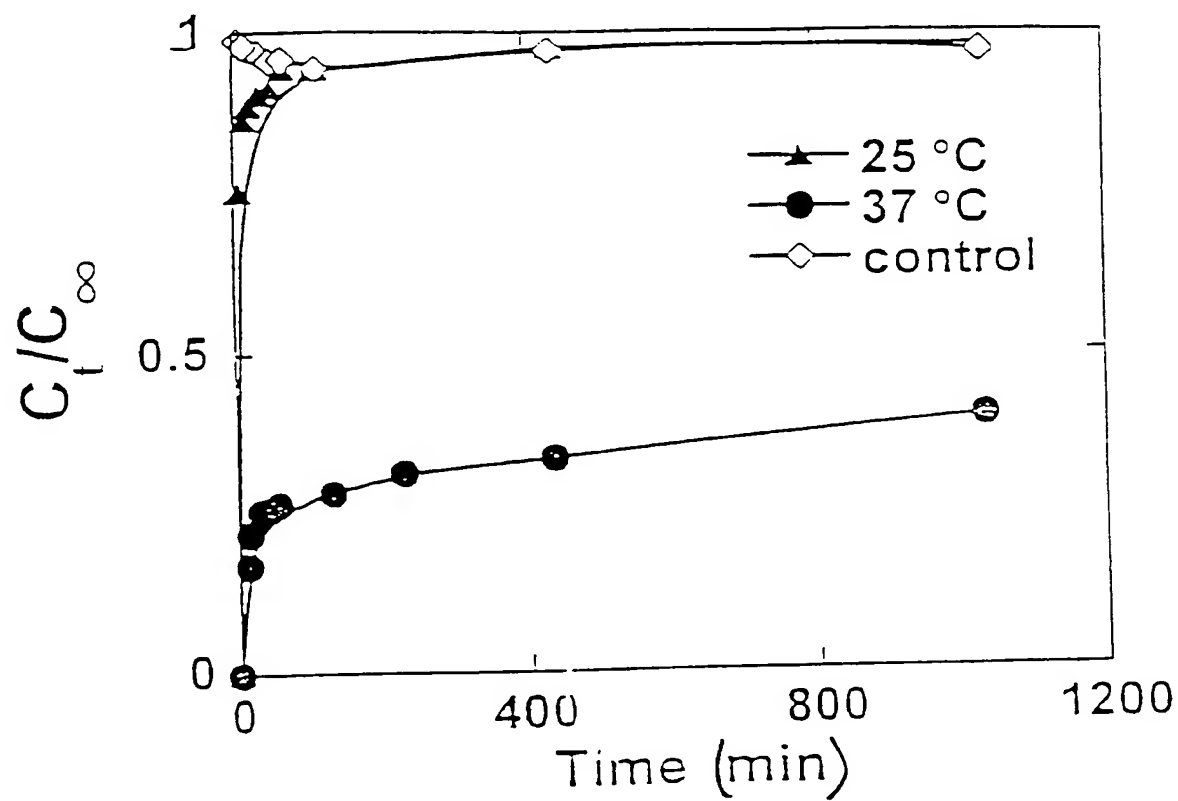


Figure 17

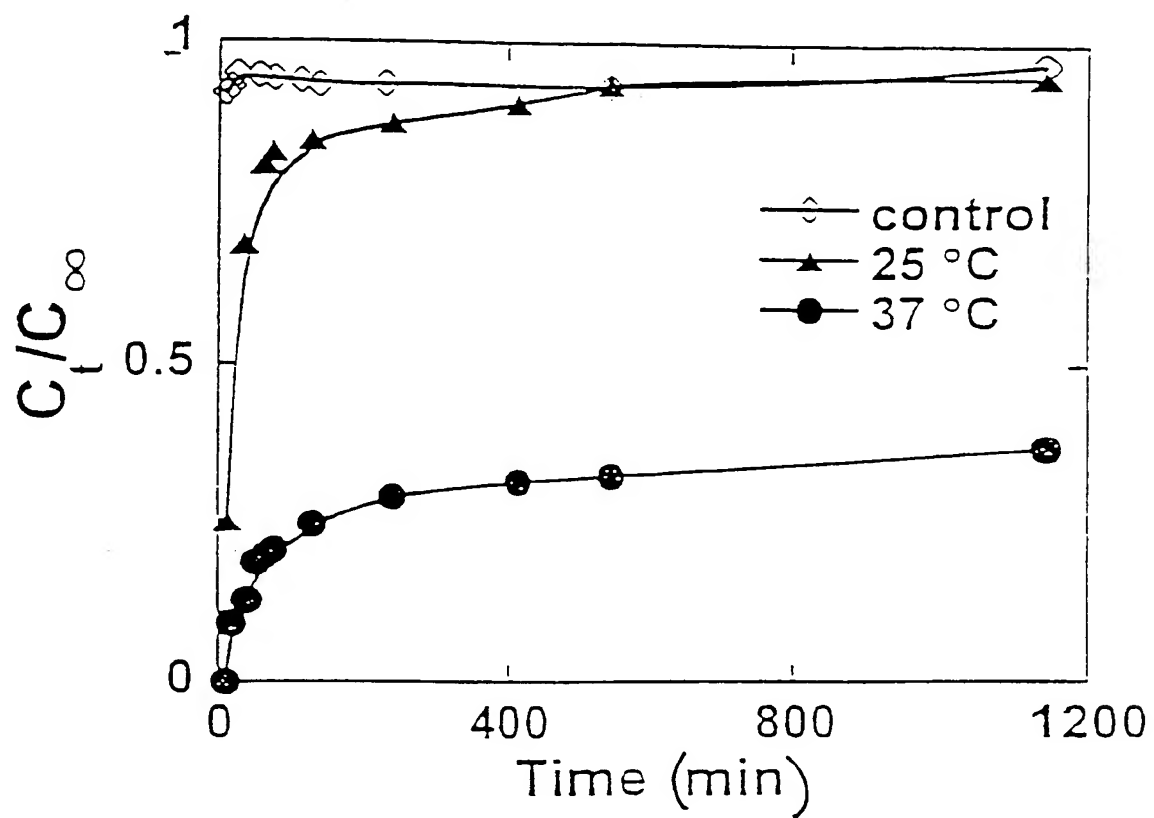


Figure 18

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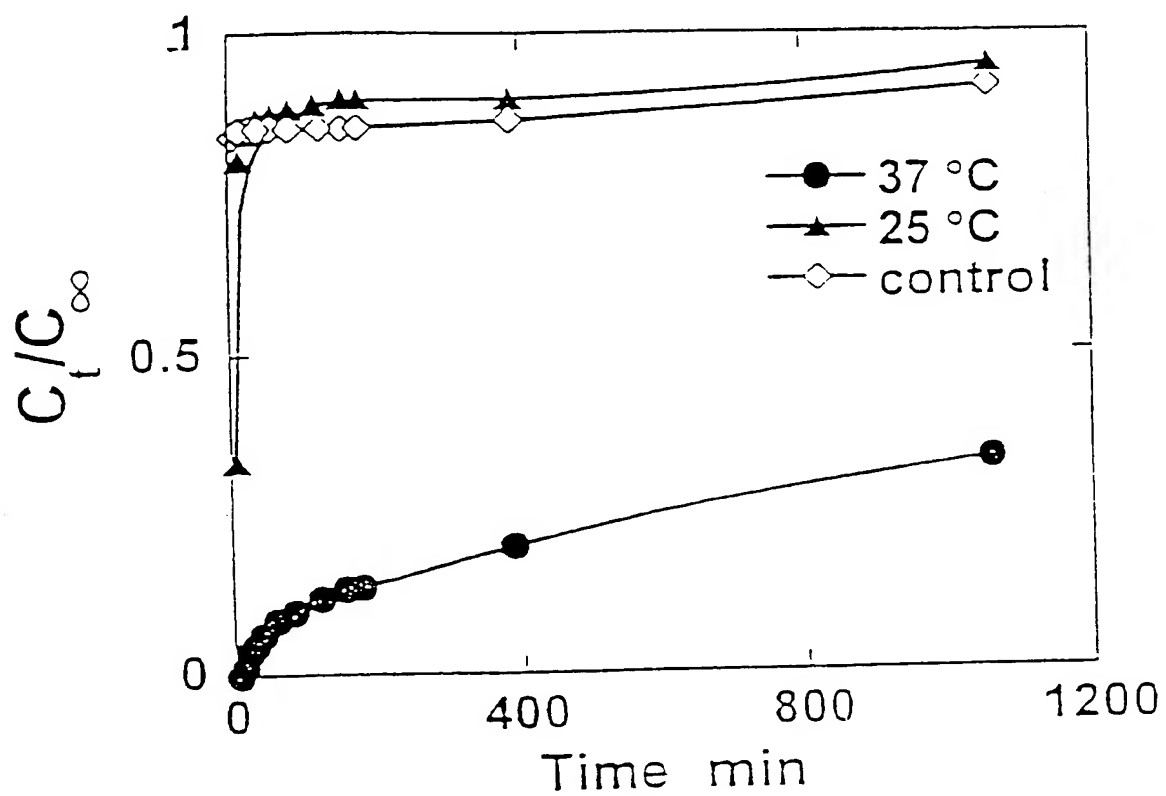


Figure 19

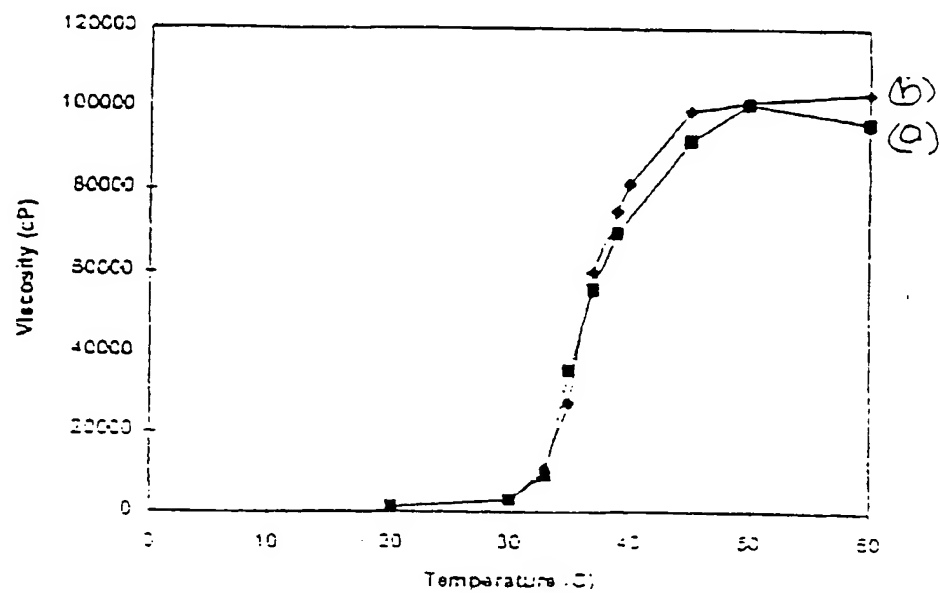


Figure 20

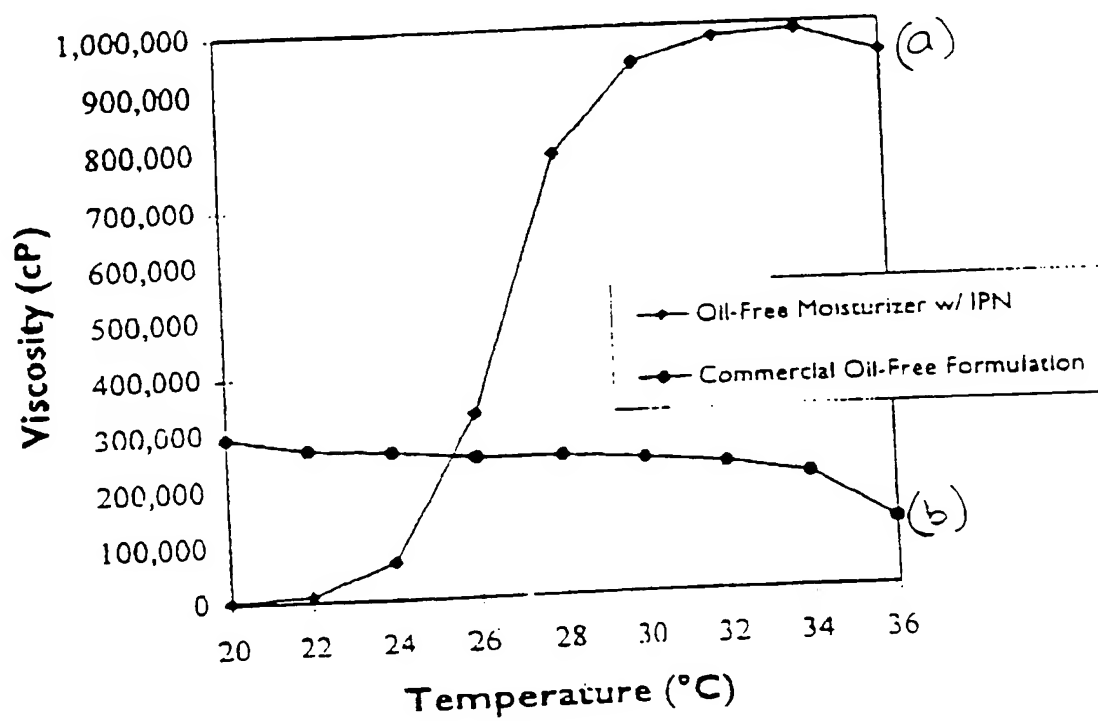


Figure 21

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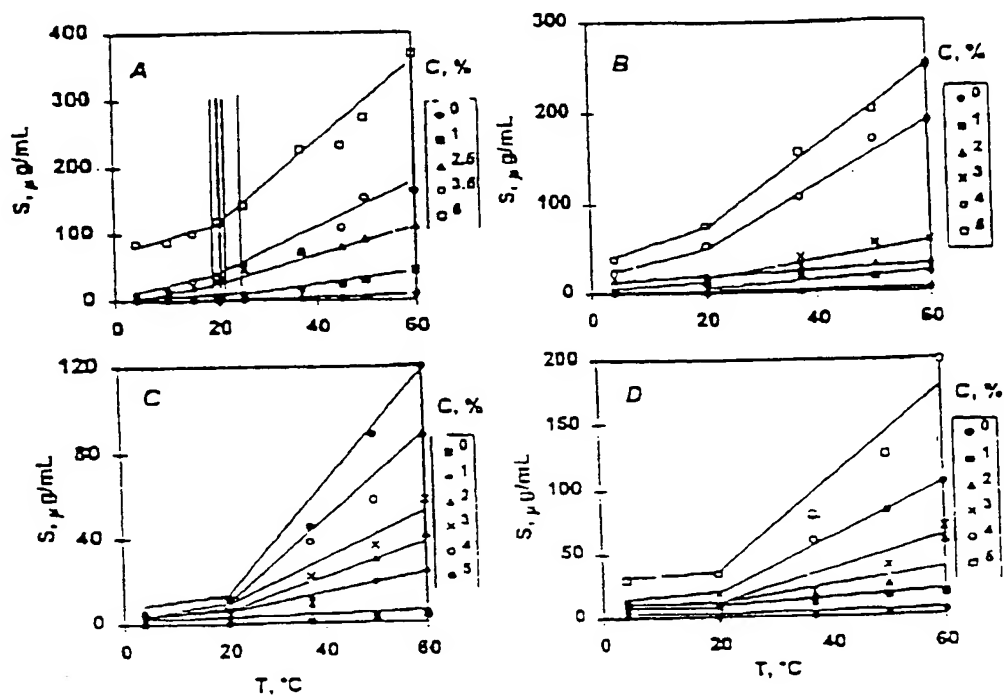


Figure 21

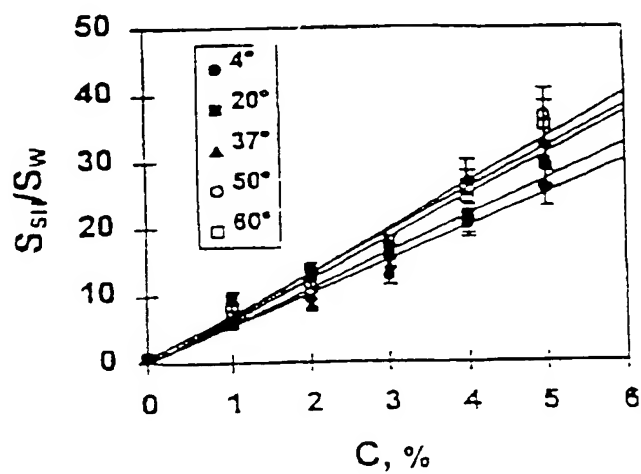


Figure 23

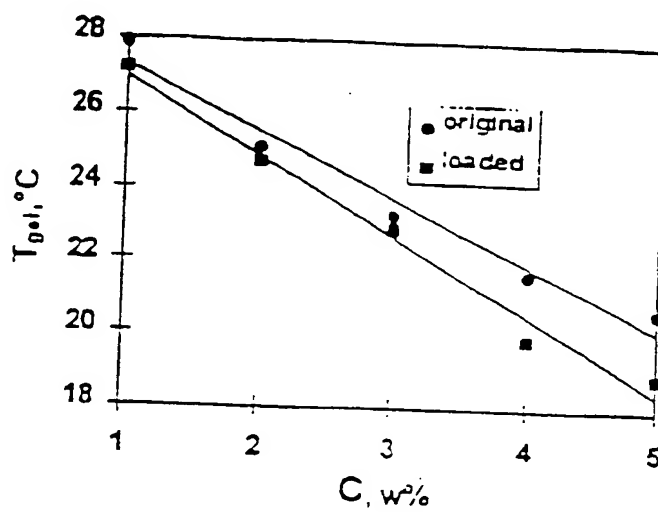
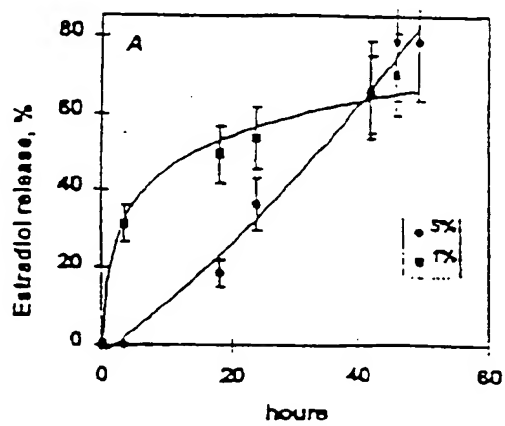
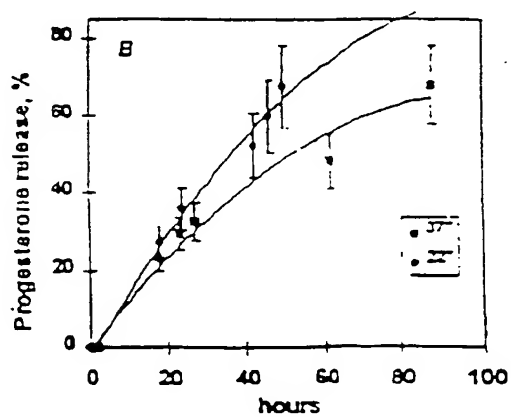


Figure 24

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a



b

Figure 25

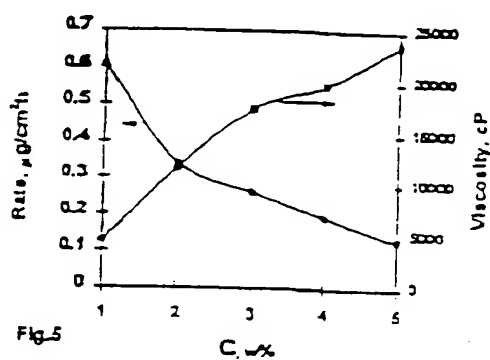


Figure 26

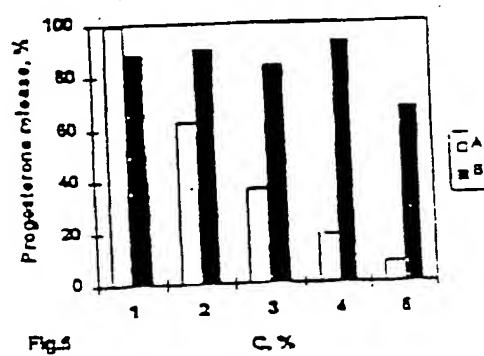


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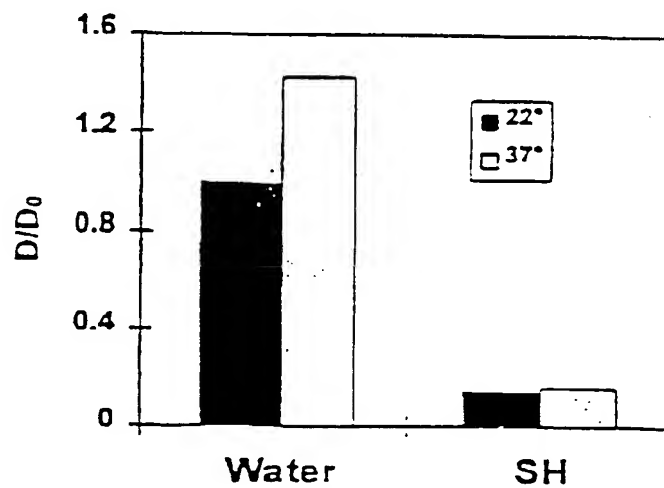


Figure 28

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/08931

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :A61K 7/00, 7/021, 7/025, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74

US CL :Please See Extra Sheet

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/49, 59, 63, 64, 65, 70.1, 70.2, 70.7, 78.02, 70.08, 400, 401, 405

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS: COSMETIC, POLYACRYLIC ACID, POLYMER NETWORK, POLOXAMER

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 5,662,892 A (BOLICH, JR. et al.) 02 September 1997, see entire document.	1-38
Y	US 5,106,609 A (BOLICH, JR et al.) 21 April 1992, see entire document.	1-38

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
I document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

03 AUGUST 1998

Date of mailing of the international search report

02 OCT 1998

Name and mailing address of the ISA/US
Commissioner of Patents and Trademarks
Box PCT
Washington, D.C. 20231

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SHELLEY A. DODSON

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gab for

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/08931

A. CLASSIFICATION OF SUBJECT MATTER:

US CL : 424/49, 59, 63, 64, 65, 70.1, 70.2, 70.7, 78.02, 70.08, 400, 401, 405

CORRECTED
VERSION*

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



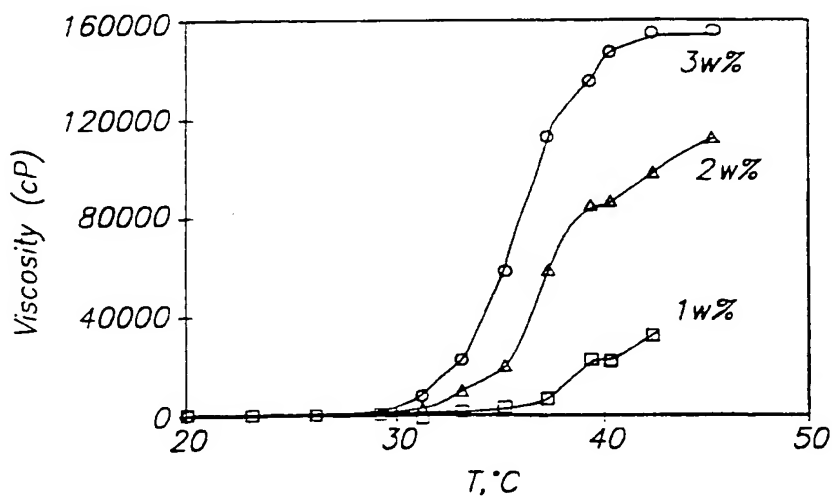
INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : A61K 7/00, 7/021, 7/025, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74		A1	(11) International Publication Number: WO 98/48768
			(43) International Publication Date: 5 November 1998 (05.11.98)
(21) International Application Number: PCT/US98/08931			
(22) International Filing Date: 1 May 1998 (01.05.98)			
(30) Priority Data: 08/846,883 1 May 1997 (01.05.97) US			
(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application US 08/846,883 (CON) Filed on 1 May 1997 (01.05.97)			
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(54) Title: COMPOSITIONS FOR COSMETIC APPLICATIONS

(57) Abstract

A cosmetic composition is described having a cosmetically acceptable carrier, comprising a reverse thermal viscosifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.



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COMPOSITIONS FOR COSMETIC APPLICATIONS

This application is a continuation-in-part application of copending application U.S.S.N. 60/034,805 filed January 2, 1997, and entitled "Responsive Polymer
5 Networks and Methods of Their Use", which is a continuation-in-part application of copending application PCT/US96/10376 filed June 14, 1996, designating the United States, and entitled "Responsive Polymer Networks and Methods of Their Use", which is a continuation-in-part application of copending application U.S.S.N. 08/580, 986
10 filed January 3, 1996, and entitled "Responsive Polymer Networks and Methods of Their Use", each of which is incorporated entirely by reference.

Field of the Invention

The present invention relates to a cosmetic composition useful in a variety of topical and personal care products, including treatments of disorders and imperfections
15 of the skin or other areas of the body. More particularly, the present invention is directed to a cosmetic composition comprising a poloxamer:poly(acrylic acid) polymer network that can be designed to reversibly gel over a wide range of conditions to provide a composition having a controllable range of viscosities, making it useful in a variety of cosmetic and personal care applications.

20

Background of the Invention

Many examples are known of cosmetic compositions intended for treatment of the skin or elsewhere on the body, where it is desired to have certain properties of viscosity. Hydrogels, such as cellulose, have been included as thickeners in cosmetic
25 compositions. A hydrogel is a polymer network which absorbs a large quantity of water without the polymer dissolving in water. The hydrophilic areas of the polymer chain absorb water and form a gel region. The extent of gelation depends upon the volume of the solution which the gel region occupies.

Reversibly gelling solutions are known in which the solution viscosity increases
30 and decreases with an increase and decrease in temperature, respectively. Such

reversibly gelling systems are useful wherever it is desirable to handle a material in a fluid state, but performance is preferably in a gelled or more viscous state.

A known material with these properties is a thermal setting gel using block copolymer polyols, available commercially as Pluronic® polyols (BASF, Ludwigshafen, Germany), which is described in U.S. Patent No. 4, 188, 373. Adjusting the concentration of the polymer gives the desired liquid-gel transition. However, concentrations of the polyol polymer of at least 18-20% by weight are needed to produce a composition which exhibits such a transition at commercially or physiologically useful temperatures. Also, solutions containing 18-20% by weight of responsive polymer are typically very viscous even in the "liquid" phase, so that these solutions can not function under conditions where low viscosity, free-flowing is required prior to transition. In addition, these polymer concentrations are so high that the material itself may cause unfavorable interactions during use.

Another known system which is liquid at room temperature, but forms a semi-solid when warmed to about body temperature is formed from tetrafunctional block polymers of polyoxyethylene and polyoxypropylene condensed with ethylenediamine, commercially available at Tetronic® polyols. These compositions are formed from approximately 10% to 5% by weight of the polyol in an aqueous medium. See, U.S. Patent No. 5,252,318.

Joshi, et al. in U.S. Patent No. 5,252,318 reports reversible gelling compositions which are made up of a physical blend of a pH-sensitive gelling polymer (such as a cross-linked poly(acrylic acid) and a temperature-sensitive gelling polymer (such as methyl cellulose or block copolymers of poly(ethylene glycol) and poly(propylene glycol)). In compositions including methylcellulose, 5- to 8-fold increases in viscosity are observed upon a simultaneous change in temperature and pH for very low methylcellulose levels (1-4% by weight). See, Figs. 1 and 2 of Joshi, et al. In compositions including Pluronic® and Tetronic® polyols, commercially available forms of poly(ethylene glycol)/poly(propylene glycol) block copolymers, significant increases in viscosity (5- to 8-fold) upon a simultaneous change in temperature and pH are observed only at much higher polymer levels. See, Figs. 3-6 of Joshi, et al.

Hoffman, et al. in WO95/24430 disclose block and graft copolymers comprising a pH-sensitive polymer component and a temperature-sensitive polymer component. The block and graft copolymers are well-ordered and contain regularly repeating units of the pH-sensitive and temperature-sensitive polymer components. The copolymers
5 are described as having a lower critical solution temperature (LCST), at which both solution-to-gel transition and precipitation phase transition occur. Thus, the transition to a gel is accompanied by the clouding and opacification of the solution. Light transmission is reduced, which may be undesirable in many applications, where the aesthetic characteristics of the composition are of some concern.

10 Thus, the known systems which exhibit reversible gelation are limited in that they require large solids content and/or in that the increase in viscosity is less than 10-fold. In addition, some known systems exhibit an increase in viscosity which is accompanied with the undesirable opacification of the composite.

15 Summary of the Invention

It is an object of the present invention to provide a cosmetic composition which includes a component capable of reversible gelation or viscosification.

It is a further object of the invention to provide a cosmetic composition which includes an ingredient capable of gelation or viscosification at very low solids content.

20 It is another object of the present invention to provide a cosmetic composition which possesses improved flow and gelation characteristics as compared to properties possessed by conventional reversible gelation compositions.

It is a further object of the invention to provide a polymer network composition for use in cosmetic compositions useful as a surfactant or emulsifier in the
25 solubilization of additives and, in particular, hydrophobic additives.

It is a further object of the invention to provide a cosmetic composition which possesses the appropriate thickness, emolliency and cosmetic effect with a minimum of solids content.

It is a further object of the invention to provide a polymer network for use in
30 cosmetic compositions useful as a suspending agent for otherwise insoluble additives.

It is yet a further object of the present invention to provide a composition capable of solubilizing emulsions at elevated temperatures.

It is yet a further object of the invention to provide new and useful cosmetic compositions incorporating the reversibly gelling polymer network composition of the present invention, which take advantage of its unique advantageous properties.

It is yet another object of the present invention to provide reversibly gelling polymer network compositions which are composed of biocompatible polymers.

These and other objects of the invention are achieved with a cosmetic compositions which incorporates a poloxamer:poly(acrylic acid) polymer network as a cosmetically acceptable carrier. The polymer network comprises a poloxamer component randomly bonded to a poly(acrylic acid), or PAA, component in and aqueous-based medium, the polymer network being capable of aggregating in response to an increase in temperature. The reverse thermal viscosifying poloxamer:poly(acrylic acid) polymer network includes random covalent bonding between the poly(acrylic acid) component and the poloxamer component of the network. The polymer network may also include some unbound or "free" poloxamer or other additives which contribute to or modify the characteristic properties of the polymer composition.

In addition, the cosmetic composition includes a cosmetic agent selected to provide a preselected cosmetic effect. By "cosmetic agent", as that term is used herein, it is meant that the additive imparts a cosmetic effect. A cosmetic effect is distinguishable from a pharmaceutical effect in that a cosmetic effect relates to the promoting bodily attractiveness or masking the physical manifestation of a disorder or disease. In contrast, a pharmaceutical seeks to treat the source or symptom of a disease or physical disorder. It is noted however, that the same additives may have either a cosmetic or pharmaceutical effect, depending upon the amounts used and the manner of administration.

By "cosmetic", as that term is used herein, it is meant the cosmetic and personal-care applications intended to promote bodily attractiveness or to cover or mask the physical manifestations of a disorder or disease. Cosmetics include those products subject to regulation under the FDA cosmetic guidelines, as well as sunscreen products,

acne products, skin protectant products, anti-dandruff products, and deodorant and antiperspirant products.

By "gelation" or viscosification, as that term is used herein, it is meant a drastic increase in the viscosity of the polymer network solution. Gelation is dependent on the
5 initial viscosity of the solution, but typically a viscosity increase in the range of 2- to 100-fold, and preferably 5- to 50-fold, and more preferably 10- to 20-fold is observed in the polymer network which is used in the preparation of the cosmetic compositions of the invention. Such effects are observed in a simple polymer network solution and the effect may be modified by the presence of other components in the cosmetic
10 composition.

By "reversibly gelling" as that term is used herein, it is meant that the process of gelation takes place upon an *increase* in temperature rather than a decrease in temperature. This is counter-intuitive, since it is generally known that solution viscosity *decreases* with an increase in temperature.

15 As used herein, "poloxamer" is a triblock copolymer derived from poly(ethylene glycol)-poly(propylene glycol)-poly(ethylene glycol) blocks. The poloxamer is capable of responding to a change in temperature by altering its degree of association and/or agglomeration. The aggregation may be in the form of micelle formation, precipitation, labile cross-linking or other factors. The poloxamer has the general
20 formula of a triad ABA block copolymer, $(P_1)_a(P_2)_b(P_1)_a$ where P_1 = poly(ethylene glycol) and P_2 = poly(propylene glycol) blocks, where a is in the range of 10-50 and where b is in the range of 50-70.

The poly(acrylic acid) component includes poly(acrylic acid) and its salts. The poly(acrylic acid) supports and interacts with the poloxamer component so that a multi-
25 material, responsive polymer network is formed. The interaction of the poloxamer and poly(acrylic acid) exhibits a synergistic effect, which magnifies the effect of the poloxamer component in viscosifying and/or gelling the solution.

The novel interaction between the constituent polymers components of the polymer network permits formation of gels at very low solids content. Gelation and/or
30 viscosification is observed in aqueous solutions having about 0.01 to 20 wt% of the

poloxamer component and about 0.01 to 20 wt% of the poly(acrylic acid) component. A typical reversibly gelling polymer network may be comprised of less than about 4 wt% of total polymer solids (e.g., poloxamer and poly(acrylic acid)) and even less than 1 wt% total polymer solids while still exhibiting reverse thermal viscosification. Of course, the total solids content including additives of a reversibly gelling polymer network composition may be much higher. The viscosity of the gel increases at least ten-fold with an increase in temperature of about 5°C at pH 7 and 1 wt% polymer. Viscosity increases may be even greater over a larger temperature range at pH 7 and 1% polymer network content.

10 The relative proportion of poloxamer and poly(acrylic acid) may vary dependent upon the desired properties of the polymer composition. In one embodiment, the poloxamer is present in a range of about 1 to 20 wt% and the poly(acrylic acid) is present in a range of about 99 to 80 wt%. In another embodiment, the poloxamer component is present in a range of about 79 to 60 wt%. In another embodiment, the poloxamer component is present in a range of about 41 to 50 wt%. In another embodiment, the poloxamer component is present in a range of about 51 to 60 wt% and the poly(acrylic acid) component is present in a range of about 49 to 40 wt%. In yet another embodiment, the poloxamer component is present in a range of about 61 to 90 wt% and the poly(acrylic acid) component is present in a range of about 39 to 20 wt%. In another embodiment, the poloxamer component is present in a range of about 81 to 99 wt% and the poly(acrylic acid) component is present in a range of about 10 to 1 wt%.

25 The poloxamer:poly(acrylic acid) polymer network described above is included in a cosmetic composition to improve the flow characteristics, thickness and other properties of the composition. The composition includes additional cosmetic agents, such as are needed for the cosmetic purpose of the composition. Additives also may be included to modify the polymer network performance, such as to increase or decrease the temperature of the liquid-to-gel transition and/or to increase or decrease the viscosity of the responsive polymer composition.

In one aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to impart thickening properties to the cosmetic composition at the use and/or application temperature. Such thickening properties include enhanced overall viscosity, as well as a desirable viscosity response with temperature. The polymer network may be useful as a thickener in pH ranges where other thickeners are not effective.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network is incorporated into a cosmetic composition to stabilize and solubilize hydrophobic agents in the cosmetic composition. The polymer network may be included to increase emulsion stability. Many emulsions, i.e., suspension of small droplets or particles of a first material in a second material, lose viscosity upon heating. As will be demonstrated herein, the poloxamer:poly(acrylic acid) polymer network retains its emulsifying properties even with temperature increase.

In addition, it may be included in the composition to impart emolliency to the composition. The composition may also act as a film-forming agent after it has been applied to the skin. This film-forming agent may be used as a barrier to prevent water loss from the skin which contributes to the moisturization of the skin.

In another aspect of the invention, the poloxamer:poly(acrylic acid) polymer network may be included as an additive in cosmetic applications to prevent viscosity loss at elevated temperatures.

Brief Description of the Drawing

The invention is described with reference to the Drawing, which is presented for the purpose of illustration and is in no way intended to be limiting, and in which:

FIG. 1 is a graph of viscosity vs. temperature for a 1 wt%, 2 wt%, and 3 wt% responsive polymer network aqueous composition of a poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 0.44 sec^{-1} ;

FIG. 2 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition demonstrating reversibility of the viscosity response;

FIG. 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates:

FIG. 4 shows a viscosity response curve for a 2 wt% poloxamer:poly(acrylic acid) polymer network composition prepared with nominal mixing and stirring and
5 prepared using high shear homogenization (8000 rpm, 30 min):

FIG. 5 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition at various pHs:

FIG. 6 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition
10 of 0.25 wt% KCl:

FIG. 7 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition with and without addition of 0.5 wt% acetamide MEA;

FIG. 8 is a graph of viscosity vs. temperature for a 1 wt% poloxamer:poly(acrylic acid) polymer network composition without and with 5 wt%, 10
15 wt% and 20 wt% added ethanol, respectively;

FIG. 9 is an illustration of a reversibly gelling polymer network used as an emulsifier and stabilizer for a hydrophobic agent:

FIG. 10 is a schematic illustration of the poloxamer:poly(acrylic acid) polymer
20 network below and above the transition temperature illustrating the aggregation of the hydrophobic poloxamer regions;

FIG. 11 is a graph of viscosity vs. pH for a 1 wt% responsive polymer network aqueous composition of a poloxamer/poly(acrylic acid) (1:1) measured at a shear rate of
0.44 sec⁻¹;

FIG. 12 is a plot of viscosity vs. temperature for (a) a 1 wt% responsive
25 polymer network aqueous composition of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) and (b) a 1 wt% physical blend of Pluronic® F127 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate 0.22 sec⁻¹;

FIG. 13 is a plot of viscosity vs. temperature for a 1 wt% responsive polymer network aqueous composition of Pluronic® F88 poloxamer:poly(acrylic acid) (1:1) in deionized water at pH 7.0 measured at shear rate of 22 sec⁻¹;

FIG. 15 is a plot of viscosity vs. temperature for a responsive polymer network composition of 2 wt% Pluronic® F123 poloxamer:poly(acrylic acid) (1:1) at pH 7.0 measured at a shear rate of 22 sec⁻¹;

FIG. 16 is a plot of viscosity vs. temperature for 1 wt% made of series of poloxamers and poly(acrylic acid) (1:1) in deionized water at a shear rate of 132 sec⁻¹;

FIG. 17 is a plot showing release of hemoglobin from a poloxamer:poly(acrylic acid) polymer network of the invention;

FIG. 18 is a plot showing the release of lysozyme from the poloxamer:poly(acrylic acid) polymer complex of the invention;

FIG. 19 is a plot showing release of insulin from a poloxamer:poly(acrylic acid) polymer network composition of the invention;

FIG. 20 is a plot of viscosity vs. temperature for a poloxamer:poly(acrylic acid) polymer network composition (a) before and (b) after sterilization by autoclave;

FIG. 21 is a plot of viscosity vs. temperature for an oil-free moisturizing formulation prepared from (a) a responsive polymer network composition of the invention and (b) a convention oil-in-water formulation;

FIG. 22 is a plot of equilibrium solubility of estradiol (A, B) and progesterone (C, D) in aqueous solutions (pH 7) of Pluronic® F127 (A, C) and responsive polymer network (B, D) vs. temperature;

FIG. 23 is a plot of the ratio of equilibrium solubilities of estradiol in responsive polymer network and water vs. polymer concentration in the responsive polymer network solutions;

FIG. 24 is a plot of the effect of loading fluorescein on the onset of gelation of responsive polymer network vs. total polymer concentration in responsive polymer network solution (pH 7.0);

FIG. 25 is a plot of the percentage of (a) estradiol and (b) progesterone release from responsive polymer network vs. time;

FIG. 26 is a plot of the rate of progesterone release and macroscopic viscosity vs. polymer concentration;

FIG. 27 is a plot of the percentage of progesterone release vs. polymer concentration in responsive polymer network; and

5 FIG. 28 is a plot of the relative diffusivity of poly(styrene) latex particles in water and responsive polymer network.

Detailed Description of the Invention

The present invention is directed to a cosmetic composition comprising a
10 cosmetically acceptable carrier comprising a novel poloxamer:poly(acrylic acid) polymer network. The polymer network functions as a temperature sensitive thickening agent, and in addition possesses surfactant and emulsifying capabilities which may be beneficial to the cosmetic composition. The polymer network composition according to the invention includes a poloxamer component randomly bonded to a poly(acrylic acid)
15 component. The two polymer component may interact with one another on a molecular level. The polymer network contains about 0.01 - 20 wt% each of poloxamer and poly(acrylic acid). Exemplary polymer network compositions range from about 1:10 to about 10:1 poloxamer:poly(acrylic acid). Polymer network gel compositions which exhibit a reversible gelation at body temperature (25-40°C) and/or at physiological pH
20 (ca. pH 3.0-9.0) and even in basic environment up to pH 13 (hair care) are particularly preferred for cosmetic applications.

In one embodiment of the invention, a 1:1 poloxamer:poly(acrylic acid) polymer network at appropriate pH exhibits flow properties of a liquid at about room temperature, yet rapidly thickens into a gel consistency of at least about five times
25 greater, preferably at least about 10 times greater, and even more preferably at least about 30 times and up to 100 times greater, viscosity upon increase in temperature of about 10°C and preferably about 5°C. The reversibly gelling polymer network of the present invention exhibit gelation even at very low polymer concentrations. For example, polymer network compositions at pH 7 comprising about 0.5 wt% poloxamer
30 component and about 0.5 wt% PAA exhibits a significant increase in viscosity from a

free-flowing liquid (50 cps) to a gel (6000 cps). The observed gelation takes place at low solids contents, such as less than 20 wt% or preferably less than about 10 wt%, or more preferably less than about 2.5 wt% or most preferably less than about 0.1 wt%. Thus, only a small amount by weight of the polymer network need be incorporated into
5 a cosmetic composition in order to provide the desired thickening or viscosifying effect.

The reverse viscosification effect at low polymer concentrations provides clear, colorless gels which are particularly well-suited to cosmetic applications. For example, very little residue is formed upon dehydration which may be important in some applications, such as in topically applied cosmetics. An additional advantage of the
10 polymer network of the invention is that it remains clear and translucent above and below the critical temperature or pH. These characteristics of the reversibly gelling polymer network make it well suited for use in cosmetic compositions.

The polymer network of the present invention technology may be added to cosmetic formulations to increase the thickness and viscosity of the composition. The
15 poloxamer:poly(acrylic acid) polymer network possesses hydrophobic regions capable of aggregation. Unlike conventional thickeners, the aggregation of the polymer network of the present invention is temperature sensitive. Thus the inventive polymer network of the present invention may have a transition temperature (i.e., temperature of aggregation) above room temperature so that the cosmetic composition is of low
20 viscosity at or below room temperature and is of high viscosity at or around body temperature (body temperature includes both surface and internal body temperature). Thus, a composition may be prepared at low temperatures while the polymer network is in a low viscosity state. Mixing of ingredients under low viscosity is expected to be easier, thus simplifying the manufacturing process. Yet, the resultant mixture would be
25 of increased viscosity at use temperatures. As a further advantage, a cosmetic composition comprising poloxamer:poly(acrylic acid) polymer network may be spread thinly to allow for even application, due to its low viscosity at room temperature, but will thicken and "fill" the skin contours upon warming up to body surface temperature.

In another aspect of the invention, the composition may be applied through a
30 nozzle that provides high shear to reduce viscosity, yet the composition regains its

viscosity after application to the skin. This contrasts with conventional formulations which permanently lose viscosity after being subjected to high shear.

In another aspect of the invention, the composition may be formulated and applied as a liquid, spray, semi-solid gel, cream, ointment, lotion, stick, roll-on
5 formulation, mousse, pad-applied formulation, and film-forming formulation.

The poloxamer:poly(acrylic acid) polymer network may also be included in a cosmetic composition for use as a stabilizing, solubilizing or emulsifying agent for a hydrophobic component of the cosmetic formulation. The strong hydrophilic regions of the poloxamer resulting from aggregation and micelle formation create hydrophobic
10 domains which may be used to solubilize and control release of hydrophobic agents. Similar micelle-based systems have been shown to protect trapped peptides against enzymatic degradation from surface enzymes.

The reversibly gelling polymer network of the present invention is a unique polymer composition designed to abruptly change its physical characteristics or the
15 characteristics and properties of materials mixed therewith with a change in temperature. Without intending to be bound by any particular mechanism or chemical structure, it is believed that the structure of the polymer network involves a random bonding of the poloxamer onto the backbone of the poly(acrylic acid). A portion of the poloxamer which is present during the polymerization reaction which forms the
20 poly(acrylic acid) is bonded to the backbone of the forming poly(acrylic acid) through hydrogen abstraction and subsequent reaction. See detailed discussion of the mechanism, below. The combination of the poly(acrylic acid) and randomly bonded poloxamer gives the composition its unique properties. Any free poloxamer remaining after polymerization of PAA remains associated with the random co-polymer, resulting
25 in a miscible composition. Free poloxamer may also be present in the polymer network composition; however, its presence is not required in order to observe reverse thermal viscosification.

The poly(acrylic acid) may be linear, branched and/or cross-linked. Poly(acrylic acid) is capable of ionization with a change in pH of the solution. By
30 ionization, as that term is used with respect to poly(acrylic acid), it is meant the

formation of the conjugate base of the acrylic acid, namely acrylate. As used herein, poly(acrylic acid) includes both ionized and non-ionized versions of the polymer. Changes in ionic strength may be accomplished by a change in pH or by a change in salt concentration. The viscosifying effect of the polymer network is partly a function of the ionization of the poly(acrylic acid); however, reverse thermal gelling may occur without ionization. Changes to the ionic state of the polymer causes the polymer to experience attractive (collapsing) or repulsive (expanding) forces. Where there is no need or desire for the composition to be applied in a high viscosity state, it may be possible to prepare the composition as non-ionized poly(acrylic acid). The body's natural buffering ability will adjust the pH of the applied composition to ionize the poly(acrylic acid) and thereby develop its characteristic viscosity.

The poloxamer possesses regions of hydrophobic character, e.g., poly(propylene glycol) blocks, and hydrophilic character, e.g., poly(ethylene glycol) blocks. The poloxamer may be linear or branched. Suitable poloxamers include triad block copolymers of poly(ethylene glycol) and poly(propylene glycol) having the general formula $(P_1)_a(P_2)_b(P_1)_a$, where P_1 = poly(ethylene glycol), and P_2 = poly(propylene glycol) blocks, where a is in the range of 10-50 and where b is in the range of 50-70, where poly(propylene glycol) represents the hydrophobic portion of the polymer and poly(ethylene glycol) represents the hydrophilic portion of the polymer. Pluronic® polymers (BASF) are commercially available for (a) in the range of 16 to 48 and (b) ranging from 54-62. One or more poloxamers may be used in the reversibly gelling polymer network composition of the present invention.

The reversibly gelling responsive polymer networks compositions of the present invention are highly stable and do not exhibit any phase separation upon standing or upon repeated cycling between a liquid and a gel state. Samples have stood at room temperature for more than three months without any noticeable decomposition, clouding, phase separation or degradation of gelation properties. This is in direct contrast to polymer blends and aqueous mixed polymer solutions, where phase stability and phase separation is a problem, particularly where the constituent polymers are immiscible in one another.

And example of the dramatic increase in viscosity and of the gelation of the reversibly gelling polymer network compositions of the invention is shown in Figure 1. Figure 1 is a graph of viscosity vs. temperatures for 1 wt%, 2 wt%, and 3 wt% polymer network compositions comprising 1:1 poloxamer:poly(acrylic acid) hydrated and neutralized. The viscosity measurements were taken on a Brookfield viscometer at a shear rate of 0.44 sec^{-1} at pH 7.0. All solutions had an initial viscosity of about 1080 cP and exhibited a dramatic increase in viscosity to gel point at about 35°C . This is not typical of all polymer network compositions since polymerization condition will affect initial viscosity. Final viscosities were approximately 33,000 cP, 100,000 cP and 155,000 cP for the 1 wt%, 2 wt% and 3 wt% compositions, respectively. This represents viscosity increases of about 30-, 90- and 140-fold, respectively. This effect is entirely reversible. Upon cooling, the composition regains its initial viscosity. This is demonstrated in Figure 2, where a 1 wt% poloxamer:poly(acrylic acid) composition is warmed through the transition temperature up to 35°C (simple curve), cooled to room temperature (24°C , ticked curve) and then warmed again up to above the transition temperature (open box curve). The viscosity response was virtually identical in all three instances.

As would be expected with a non-Newtonian system, the solution viscosity differs with different shear rates. Figure 3 shows the viscosity response of a 2 wt% poloxamer:poly(acrylic acid) polymer composition at various shear rates. The viscosity response is consistent between 24°C and 34°C ; however, the final viscosity is reduced with increasing shear rate.

However, unlike many prior art hydrogels, e.g., carbomers, the poloxamer:poly(acrylic acid) polymer network composition does not permanently lose viscosity after being subjected to high shear conditions. The poloxamer:poly(acrylic acid) polymer network composition remains unaffected by such shear conditions as homogenization. Figure 4 compares the viscosity response curve of a 2 wt% poloxamer:poly(acrylic acid) polymer composition prepared with nominal mixing (simple line) and stirring with that of a polymer composition of similar composition

prepared using high shear homogenization designated by a ticked line (8000 rpm, 30 min). No significant decrease in viscosity is observed.

A number of factors influence the viscosity and transition temperature of the composition. The more important factors include polymer concentration, pH, and
5 presence and nature of additives.

The effect of pH on the viscosity of reversibly gelling polymer networks is shown in Figure 5. Increasing pH from the starting pH has a lesser effect on the viscosity than decreasing the pH. This may relate to the extent of ionization of the poly(acrylic acid) component of the polymer network as discussed above. This may be
10 clearly seen in Figure 5 when comparing the viscosity response of a 1 wt% poloxamer:poly(acrylic acid) polymer composition at pH 5 and pH 11. Satisfactory viscosities can be obtained at high pHs indicating the potential value of the reversibly gelling polymer network in products such as depilatories, hair straighteners and hair relaxers.

The responsive polymer network may also include additives for influencing the performance of the polymer composition, such as the transition temperature and the viscosity of the polymer composition above the transition temperature. The following list is not intended to be exhaustive but rather illustrative of the broad variety of
15 additives which can be used.

These materials include solvents (e.g., 2-propanol, ethanol, acetone, 1,2-pyrrolidinone, N-methylpyrrolidinone), salts (e.g., calcium chloride, sodium chloride, potassium chloride, sodium or potassium phosphates, borate buffers, sodium citrate),
20 preservatives (benzalkonium chloride, phenoxyethanol, sodium hydroxymethylglycinate, ethylparaben, benzoyl alcohol, methylparaben, propylparaben, butylparaben, Germaben II), humectant/moisturizers (acetamide MEA, lactimide MEA, hydrolyzed collagen, mannitol, panthenol, glycerin), lubricants (hyaluronic acid, mineral oil, PEG-60-lanolin, PPG-12-PEG-50-lanolin, PPG-2 myristyl ether propionate) and surfactants.

Surfactants may be divided into three classes: cationic, anionic, and non-ionics.
30 An example of a cationic surfactant used is ricinoleamidopropyl ethyldimonium

- ethosulfate (Lipoquat R). Anionic surfactants include sodium dodecyl sulfate and ether sulfates such as Rhodapex CO-436. Nonionic surfactants include Surfynol CT-111, TG, polyoxyethylene sorbitan fatty acid esters such as Tween 65 and 80, sorbitan fatty acid esters such as Span 65, alkylphenol ethoxylates such as Igepal CO-210 and 430, 5 dimethicone copolyols such as Dow Corning 190, 193, and Silwet L7001.

- The addition of polymers has been studied including xanthan gum, celluloses such as hydroxyethylcellulose (HEC), carbomethoxycellulose (CMC), lauryldimonium hydroxypropyl oxyethyl cellulose (Crodacel QL), hydroxypropylcellulose (HPC), and hydroxypropylmethylcellulose (HPMC), poly(acrylic acid), cyclodextrins, methyl 10 acrylamido propyl triammonium chloride (MAPTAC), polyethylene oxide, polyvinylpyrrolidone, polyvinyl alcohol, and propylene oxide/ethylene oxide random copolymers. Poloxamers may also be used as additives. Examples include both the Pluronic® polyols having an $(P_1)_a(P_2)_b(P_1)_a$ structure such as Pluronic® F38, L44, P65, F68, F88, L92, P103, P104, P105, F108, L122, and F127, as well as the reverse 15 Pluronic® R series $(P_2)_a(P_1)_b(P_2)_a$ structure such as Pluronic® 17R2 and 25R8. Other miscellaneous materials include propylene glycol, urea, triethanolamine, alkylphenol ethoxylates (Iconol series), and linear alcohol alkoxylates (Plurafac series).

- Additives affect the viscosity of the compositions differently depending upon the nature of the additive and its concentration. Some additives will affect the initial or 20 final viscosity, whereas others will affect the temperature range of the viscosity response, or both.

- Potassium chloride and acetamide MEA are two examples of additives which decrease the final viscosity of the composition (see Example 30). KCl (0.25%) added to a 1 wt% reversibly gelling polymer composition reduces the viscosity by about 3000 25 cps. See Figure 6. The humectant, acetamide MEA, lowers the viscosity of a 1 wt% solution by approximately 1, 500 cps (see Figure 7).

- Glycerin, ethanol and dimethicone copolymer have been shown to affect the temperature range over which the viscosity response occurs. Glycerin shifts the transition temperature to a slightly lower range from an initial 24-34°C to about 24- 30 30°C, but does not affect the final viscosity (see Example 44). The effect of ethanol on

the viscosity is different at different concentration levels. At 5 wt% and 10 wt% added ethanol, the transition temperature is shifted to lower ranges, e.g., 24-29°C and 20-29°C, respectively. At 20 wt% added ethanol, the composition not only exhibits a lowering of the transition temperature, but also a marked increase in initial and final
5 viscosity. See Figure 8. Dimethicone copolymer (1 wt%) also changed the transition temperature, but in this instance the transition temperature range was raised to 28-41°C. Thus, proper selection of additives permits the formulator to adjust the transition temperature to various ranges.

Those skilled in the art will appreciate that the polymer network compositions of
10 the present invention may be utilized for a wide variety of cosmetic and personal care applications. To prepare a cosmetic composition, an effective amount of cosmetically active agent(s) which imparts the desirable cosmetic effect is incorporated into the reversibly gelling polymer network composition of the present invention. Preferably the selected agent is water soluble, which will readily lend itself to a homogeneous
15 dispersion through out the reversibly gelling polymer network composition; however, the polymer network has been demonstrated to significantly solubilize or suspend hydrophilic agents in order to improve formulation homogeneity (see Example 36). It is also preferred that the agent(s) is nonreactive with the polymer network composition. For materials which are not water soluble, it is also within the scope of the invention
20 to disperse or suspend powders or oil (lipophilic materials) throughout the polymer network composition. It will also be appreciated that some applications may require a sterile environment. It is contemplated as within the scope of the invention that the reversibly gelling polymer network compositions of the present invention may be prepared under sterile conditions. An additional feature of the reversibly gelling
25 polymer composition is that it is prepared from constituent polymers that have known accepted toxicological profiles.

The poloxamer:poly(acrylic acid) polymer network has been evaluated under Good Laboratory Practice (GLP) standard protocols known in the art for toxicity in animal models and found to exhibit no toxic effects. The results of the toxicity study

are summarized in the following Table 1. The non-toxicity of the polymer network makes it an ideal candidate for use in cosmetic compositions.

Table 1. Toxicity data for 6% poloxamer:poly(acrylic acid) solution at pH 7.

Reaction Tests	Mode of Testing	Results
Skin sensitization	guinea pig - topical	not a sensitizer
Eye irritation	rabbit - eye instillation	negative
Primary dermal irritation	rabbit - topical	very slight edema (1 on a scale of 1-8)
Acute dermal toxicity	rat - single dose (2g/kg)	no toxicity
Acute oral toxicity	rat - single dose (5g/kg)	no toxicity
AMES test		negative

Exemplary cosmetic and personal care applications, for which the reversibly gelling polymer network composition may be used include, but are not limited to, baby products, such as baby shampoos, lotions, powders and creams; bath preparations, such as bath oils, tablets and salts, bubble baths, bath fragrances and bath capsules; eye makeup preparations, such as eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover and mascara; fragrance preparations, such as colognes and toilet waters, powders and sachets; noncoloring hair preparations, such as hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics: hair coloring preparations such as hair dye, hair tints, hair shampoos, hair color sprays, hair lighteners and hair bleaches; makeup preparations such as face powders, foundations, leg and body paints, lipstick, makeup bases, rouges and makeup fixatives; manicuring preparations such as basecoats and undercoats, cuticle softeners, nail creams and lotions, nail extenders, nail polish and enamel, and nail polish and enamel remover; oral hygiene products such as dentrifices and mouthwashes; personal cleanliness, such as bath soaps and detergents, deodorants, douches and feminine hygiene products; shaving preparations such as aftershave lotion, beard softeners, men's talcum, shaving cream, shaving soap and preshave lotions; skin care preparations such as cleansing preparations, skin antiseptics, depilatories, face and

neck cleansers, body and hand cleansers, foot powders and sprays, moisturizers, night preparations, paste masks, and skin fresheners; and suntan preparations such as suntan creams, gels and lotions, indoor tanning preparations.

Preparation of the above-named cosmetic compositions and others may be accomplished with reference to any of the cosmetic formulation guidebooks and industry journals which are available in the cosmetic industry. These references supply standard formulations which may be modified by the addition or substitution of the reversible viscosifying polymer network of the present invention into the formulation. Suitable guidebooks include Cosmetics and Toiletries Magazine, Vo. 111 (March, 1996); Formulary: Ideas for Personal Care, Croda, Inc., Parsippany, NJ (1993); and Cosmeticon: Cosmetic Formulary, BASF, which are hereby incorporated in their entirety by reference.

The cosmetic composition may be in any form. Suitable forms include but are not limited to lotions, creams, sticks, roll-on formulations, mousses, aerosol sprays, pad-applied formulations, and film-forming formulations.

As those skilled in the art will appreciate, the foregoing list is exemplary only. Because the reversibly gelling polymer network composition of the present invention is suited for application under a variety of physiological conditions, a wide variety of cosmetically active agents may be incorporated into and administered from the polymer network composition. In addition to the poloxamer:poly(acrylic acid) polymer network, additional cosmetically acceptable carriers may be included in the composition, such as by way of example only, emollients, surfactant, humectants, powders and other solvents. By way of example only, the cosmetic composition also may include additional components, which serve to provide additional aspects of the cosmetic affect or to improve the stability and/or administration of the cosmetic. Such additional components include, but are not limited to, preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, antiperspirants, antiseptics, antistatic agents, astringents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents,

conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture
5 barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers, powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators,
10 thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or fragrances. Suitable materials which serve the additive functions listed here are well known in the cosmetic industry. a listing of the additive function and materials suitable for incorporation into the cosmetic composition may be found in Appendix A, which is appended hereto at the end of the specification. Further information may be obtained
15 by reference to The Cosmetic Bench Handbook, Cosmetics & Toiletries, C.C. Urbano, editor, Allured Publ. Corp., 1996, which is hereby incorporated in its entirety by reference.

A brief description of some preferred additives and cosmetically active agents follows. The compositions of the invention include a safe and effective amount of a
20 cosmetically active agent. "Safe and effective", as it is used herein, means an amount high enough to significantly positively modify the condition to be treated or the cosmetic effect to be obtained, but low enough to avoid serious side effects.

Preservative can be desirably incorporated into the cosmetic compositions of the invention to protect against the growth of potentially harmful microorganisms. Suitable
25 preservatives include, but are not limited to, alkyl esters of parahydroxybenzoic acid, hydantoin derivatives, parabens, propionate salts, triclosan tricarbonyl, tea tree oil, alcohols, farnesol, farnesol acetate, hexachlorophene and quaternary ammonium salts, such as benzaldehyde, and a variety of zinc and aluminum salts. Cosmetic chemists are familiar with appropriate preservatives and may select that which provides the

required product stability. Preservatives are preferably employed in amounts ranging from about 0.0001% to 2% by weight of the composition.

Emollients can be desirably incorporated into the cosmetic compositions of the invention to provide lubricity to the formulation. Suitable emollients may be in the form of volatile and nonvolatile silicone oil, highly branched hydrocarbons and synthetic esters. Amounts of emollients may be in the range of about 0.1-30 wt%, and preferably about 1-20 wt%. By way of example only, suitable silicones include cyclic or linear polydimethylsiloxanes, polyalkylsiloxanes, polyalkylarylsiloxanes and polyether siloxanes. By way of example only, suitable ester emollients include alkenyl esters of fatty acids, polyhydric alcohols, such as ethylene glycol mono and di-fatty acid esters, polyethylene glycol and the like, ether-esters, such as fatty acid esters of ethoxylated fatty alcohols, wax esters, such as beeswax, spermaceti, myristyl myristate and stearyl stearate, and sterol esters such as cholesterol fatty acids.

A variety of oily emollients may be employed in the compositions of this invention. These emollients may be selected from one or more of the following classes:

1. Triglyceride esters such as vegetable and animal fats and oils. Examples include castor oil, cocoa butter, safflower oil, cottonseed oil, corn oil, olive oil, cod liver oil, almond oil, avocado oil, palm oil, sesame oil, squalene, Kikui oil and soybean oil;
2. Acetoglyceride esters, such as acetylated monoglycerides;
3. Ethoxylated glycerides, such as ethoxylated glyceryl monostearate;
4. alkyl esters of fatty acids having 10 to 20 carbon atoms, such as, methyl, isopropyl, and butyl esters of fatty acids, and including hexyl laurate, isohexyl laurate, isohexyl palmitate, isopropyl palmitate, decyl oleate, isodecyl oleate, hexadecyl stearate, decyl stearate, isopropyl isostearate, diisopropyl adipate, diisohexyl adipate, dihexyldecyl adipate, diisopropyl sebacate, lauryl lactate, myristyl lactate, and cetyl lactate;
5. Alkenyl esters of fatty acids having 10 to 20 carbon atoms, such as oleyl myristate, oleyl stearate, and oleyl oleate and the like;
6. Fatty acids having 10 to 20 carbon atoms, such as pelargonic, lauric, myristic, palmitic, stearic, isostearic, hydroxystearic, oleic, linoleic, ricinoleic, arachidic, behenic, and erucic acids and the like;
7. Fatty alcohols having 10 to 20 carbon atoms, such as, lauryl, myristyl, cetyl, hexadecyl, stearyl, isostearyl, hydroxystearyl, oleyl,

- ricinoleyl, behenyl, erucyl, and 2-octyl dodecanyl alcohols are examples of satisfactory fatty alcohols and the like; 8. Fatty alcohol ethers, such as ethoxylated fatty alcohols of 10 to 20 carbon atoms including the lauryl, cetyl, stearyl, isostearyl, oleyl, and cholesterol alcohols, having attached thereto from 1 to 50 propylene oxide groups; 9.
- 5 Ether-esters such as fatty acid esters of ethoxylated fatty alcohols; 10. lanolin and derivative, such as lanolin, lanolin oil, lanolin wax, lanolin alcohols, lanolin fatty acids, isopropyl lanolate, ethoxylated lanolin, ethoxylated lanolin alcohols, ethoxylated cholesterol, propoxylated lanolin alcohols, acetylated lanolin alcohols, lanolin alcohols linoleate, lanolin alcohols ricinoleate, acetate of lanolin alcohols ricinoleate, acetate of
- 10 ethoxylated alcohols-esters, hydrogenolysis of lanolin, ethoxylated hydrogenated lanolin, ethoxylated sorbitol lanolin, and liquid and semisolid lanolin absorption bases and the like; 11. Polyhydric alcohol esters, such as, ethylene glycol mono and di-fatty acid esters, diethylene glycol mono- and di-fatty acid esters, polyethylene glycol (200-6000) mono- and di-fatty acid ester, propylene glycol mono- and di-fatty acid esters,
- 15 polypropylene glycol 2000 monooleate, polypropylene glycol 2000 monostearate, ethoxylated propylene glycol monostearate, glyceryl mono- and di-fatty acid esters, polyglycerol polyfatty esters, ethoxylated glyceryl monostearate, 1,2-butylene glycol monostearate, 1,2-butylene glycol distearate, polyoxyethylene polyol fatty acid ester, sorbitan fatty acid esters, and polyoxyethylene sorbitan fatty acid esters are satisfactory
- 20 polyhydric alcohol esters; 12. Waxes such as beeswax, spermaceti, myristyl myristate, stearyl stearate; 13. Beeswax derivatives, e.g., polyoxyethylene sorbitol beeswax; 14. Vegetable waxes including carnauba and candelilla waxes; 15. Phospholipids such as lecithin and derivatives; 16. Sterol including cholesterol and cholesterol fatty acid esters; 17. Amides such as fatty acid amides, ethoxylated fatty
- 25 acid amides, solid fatty acid alkanolamides.

Humectants may be added to the composition to increase the effectiveness of the emollient, to reduce scaling, to stimulate removal of built-up scale and improve skin feel. by way of example only, suitable humectants include polyhydric alcohols, such as glycerol, polyalkylene glycols, alkylene polyols, their derivatives, propylene glycol,

30 dipropylene glycol, polypropylene glycol, polyethylene glycol, sorbitol, hydroxypropyl

sorbitol, hexylene glycol, 1,3-butylene glycol, 1,2,6-hexanetriol, ethoxylated glycerol, propoxylated glycerol and the like. The amount of humectant may be in the range of about 0.5-30 wt% and preferably between 1-15 wt%.

In topical skin care applications, a variety of active substances may be
5 advantageously employed. by way of example, only suitable active agents which may be incorporated into the cosmetic composition include anti-aging active substances, anti-wrinkle active substances, hydrating or moisturizing or slimming active substances, depigmenting active substances, substances active against free radicals, anti-irritation
10 active substances, sun protective active substances, anti-acne active substances, firming-up active substances, exfoliating active substances, emollient active substances, and active substances for the treating of skin disorders such as dermatitis and the like.

By way of example only, in the case of hydration, one or more moisturizers may be used, such as glycerin or urea, in combination with one or more precursor
15 agents for the biosynthesis of structural proteins, such as hydroxyproline, collagen peptides, and the like.

By the way of example only, in case of slimming, at least one ketolytic agent or an alpha-hydroxyacid such as a salicylic acid or 5-n-octanoic salicylic acid may be used in combination with at least one liporegulating agent such as caffeine.

By way of example only, in the case of depigmentation, at least one keratolytic
20 agent is used in combination with a depigmenting agent such as hydroquinone, tyrosinase inhibitor (koscic acid), kojic acid and sodium metabisulfite and the like.

By way of example only, in the case of protection against free radical agents, vitamin E (against CO_2 radicals), superoxide dismutase (against O_2 free radicals) and sugar and caffeine (against OH free radicals).

25 By way of example only, in the case of anti-aging, moisturizers, sunscreens, alpha-hydroxyacids, salicylic acid or surface restructuring agents may be used in combination with enzymes for the repair of DNA, vascular protective agents or phospholipids rich in oligoelements and polyunsaturated fatty acids.

By way of example only, in the case of anti-acne agents, keratolytics, such as salicylic acid, sulfur, lactic acid, glycolic, pyruvic acid, urea, resorcinol and N-acetylcysteine, and retinoids, such as retinoic acid and its derivatives may be used.

By way of example only, in the case of anti-inflammation, non-steroidal anti-inflammatory agents (NSAIDS) may be used, such as propionic acid derivatives, acetic acid, fenamic acid derivatives, biphenylcarboxylic acid derivatives, oxicams, including but not limited to aspirin, acetaminophen, ibuprofen, naproxen, benoxaprofen, flurbiprofen, fenbufen, ketoprofen, indoprofen, piroprofen, carprofen, and bucloxic acid and the like.

By way of example only, in the case of antibiotic and antimicrobials may be included in the composition of the invention. Antimicrobial drugs preferred for inclusion in compositions of the present invention include salts of β -lactam drugs, quinolone drugs, ciprofloxacin, norfloxacin, tetracycline, erythromycin, amikacin, triclosan, doxycycline, capreomycin, chlorhexidine, chlortetracycline, oxytetracycline, clindamycin, ethambutol, hexamidine isethionate, metronidazole, pentamidine, gentamicin, kanamycin, lineomycin, methacycline, methanamine, minocycline, neomycin, netilmicin, paromomycin, streptomycin, tobramycin, miconazole and amanfadine and the like.

By way of example only, in the case of sunscreen protection, suitable agents include 2-ethylhexyl p-methoxycinnamate, 2-ethylhexy N,N-dimethyl-p-aminobenzoate, p-aminobenzoic acid, 2-phenyl p-methoxycinnamate, 2-ethylhexyl octocrylene, oxybenzone, homomenthyl salicylate, octyl salicylate, 4,4'-methoxy-t-butyl dibenzoylmethen, 4-isopropyl dibenzoylmethane, 3-benzylidene camphor, 3-(4-methylbenzylidene) camphor, titanium dioxide, zinc oxide, silica, iron oxide, and mixtures thereof and the like. The sunscreens disclosed therein have, in a single molecule, two distinct chromophore moieties which exhibit different ultra-violet radiation absorption spectra. One of the chromophore moieties absorbs predominantly in the UVB radiation range and the other absorbs strongly in the UVA radiation range. These sunscreens provide higher efficacy, broader UV absorption, lower skin penetration and longer lasting efficacy relative to conventional sunscreens. Generally,

the sunscreens can comprise from about 0.5% to about 20% of the compositions useful herein. Exact amounts will vary depending upon the sunscreen chosen and the desired Sun Protection Factor (SPF). SPF is a commonly used measure of photoprotection of a sunscreen against erythema.

5 By way of example only, in the case of sunless tanning agents include, dihydroxyacetone, glyceraldehyde, indoles and their derivatives, and the like.

 The composition may include cleansing surfactants. Cleansing surfactants are cationic, anionic, amphoteric or non-ionic surfactants which are water-soluble and produce a consumer-acceptable amount of foam. Non-ionic surfactants are well-known
10 materials and have been used in cleansing compositions. Therefore, suitable non-ionic surfactants include, but are not limited to, compounds in the classes known as alkanolamides, block copolymers of ethylene and propylene, ethoxylated alcohols, ethoxylated alkylphenols, alkyl polyglycosides and mixtures thereof. In particular, the non-ionic surfactant can be an ethoxylated alkylphenol, i.e., a condensation product of
15 an alkylphenol having an alkyl group containing from about 6 to about 12 carbon atoms in either a straight chain or branched chain configuration with ethylene oxide, the ethylene oxide being present in an amount equal to at least about 8 moles ethylene oxide per mole of alkylphenol. Examples of compounds of this type include
20 nonylphenol condensed with about 9.5 moles of ethylene oxide per mole of phenol; dodecylphenol condensed with about 12 moles of ethylene oxide per mole of phenol; dinonylphenol condensed with about 15 moles of ethylene oxide per mole of phenol; octylphenol condensed with about ten moles of ethylene oxide per mole of phenol; and diisooctyl phenol condensed with about 15 moles of ethylene oxide per mole of phenol.

 A wide variety of acids, bases, buffers, and sequestrants can be utilized to adjust
25 and/or maintain the pH and ionic strength of the compositions useful in the instant invention. Materials useful for adjusting and/or maintaining the pH and/or the ionic strength include sodium carbonate, sodium hydroxide, hydrochloric acid, phosphoric acid, sulfuric acid, acetic acid, sodium acetate, sodium hydrogen phosphate, sodium dihydrogen phosphate, citric acid, sodium citrate, sodium bicarbonate, triethanolamine,
30 EDTA, disodium EDTA, tetrasodium EDTA, and the like.

The polymer network may be useful as a solubilization agent in cosmetic and personal care applications. A self-assembling system comprising the reversibly gelling polymer network exhibits thermogelation, pH sensitivity, and the ability to solubilize hydrophobic agents in aqueous media. When poloxamer is copolymerized with
5 poly(acrylic acid) (PAA) according to the invention, the resulting copolymer network is bioadhesive and can be applied in a number of therapies. The materials described in this invention combine "reverse" thermoviscosification mucoadhesion, solubilization of hydrophobic and difficult to manage moieties, easy formulation, and protection of
10 agents from degradation to provide a superior medium for cosmetic and personal care products.

The reversible viscosification of the polymer network at elevated temperatures makes the materials idea for use as thickening agents in cosmetic and personal care products at any temperature above the transition. Another use of the "thickening" of solutions containing the polymer network as a thickener supplement in emulsions.
15 Currently, emulsifiers are often negatively affected by increased temperatures. An additive with reverse thermal viscosification properties, however, would react in exactly the opposite way, increasing its ability to emulsify as it gained three-dimensional structure upon heating above its transition temperature.

In the applications where the reversibly gelling polymer composition can act as
20 a surfactant, the polymer network will have the ability to act as a primary emulsifier without any (or with very little) addition of traditional surfactant. The responsive polymer network will also act as a stabilizer for oil soluble ingredients that would conventionally need to be solubilized by oils in formulation. The hydrophobic portion of the polymer network (PPO) forms domains which act as reservoirs for an oil-soluble
25 or hydrophobic additive, such as an oil droplet, as is illustrated in Figure 9. These two features of the material of the invention would enable it to be used as a base in a cosmetic formulation that would be non-greasy due to lack of oils, such as petrolatum and mineral oil. The increase in viscosity above the transition temperature adds structure and yield value to the water phase and results in a highly stable emulsion.

Thus, poloxamer:poly(acrylic acid) polymer network compositions are valuable materials in the formulation of cosmetic and personal care products. In particular, they may be useful as rheology modifiers, provide a cushioning effect on the skin, offer barrier properties and controlled release of actives. In addition, the polymer
5 composition may serve as a surfactant and is compatible with most ingredients used in the cosmetic industry.

The above properties of the poloxamer:poly(acrylic acid) polymer network provides a cosmetic composition that spreads evenly and smoothly and which leaves a lubricious feel to the skin. A sensory evaluation was conducted with seven random
10 volunteers in order to determine the sensory effect of a cream formulation on the skin. An oil-free cosmetic formulation was prepared substantially as set forth in Example 33(b) and was compared to Nivea Oil Free, a product of Beiersdorf of Germany. Volunteers placed unmarked samples on the skin and evaluated the formulation based upon its feel and texture. The samples were rated on a scale of 1 (bad) to 5 (good).
15 The oil-free cosmetic formulation of the present invention scored equally to the Nivea Oil Free moisturizing product. Both samples scored a 3.5 on the rating scale.

The observed thermal behavior of the reversibly gelling polymer network suggests that the increase in viscosity is due to aggregation of the hydrophobic portion of the poloxamer at the transition temperature which, because of bonding with the
20 poly(acrylic acid) component, serve as temporary cross-links which physically bridge adjacent chains of poly(acrylic acid) to provide a viscous gel-like extended polymer structure. The aggregation process may be understood as occurring as shown in Figure 10, in which a backbone 20 represent poly(acrylic acid), a thin band 24 represents the hydrophobic poly(propylene) glycol region of the poloxamer and a thick band 26
25 represents the hydrophilic poly(ethylene glycol) region of the poloxamer. Below the transition temperature, the polymer network is randomly arranged, as is shown in Figure 10(a). At or above the transition temperature, the hydrophobic regions 24 associate to form aggregations or micelles 28, as is shown in Figure 10(b). The association increases the effective molecular weight of the polymer network
30 composition with the corresponding increase in viscosity.

A general method of making the poloxamer:PAA polymer network compositions of the present invention comprises solubilization of the poloxamer in acrylic acid monomer, followed by polymerization of the monomer to PAA. Polymerization may be accomplished by addition of a polymerization initiator or by irradiation techniques.

5 The initiator may be a free radical initiator, such as chemical free radical initiators and UV or gamma radiation initiators. Conventional free radical initiators may be used according to the invention, including, but in no way limited to ammonium persulfate, benzoin ethyl ether, benzyl peroxide, 1, 2'-azobis(2,4-dimethylpentanitrile) (Vazo 52) and azobisisobutyronitrile (AIBN). Initiation may also be accomplished using cationic

10 or ionic initiators. many variations of this method will be apparent to one skilled in the art and are contemplated as within the scope of the invention. For example, the poloxamer component may be dissolved in an acrylic acid/water mixture instead of pure monomer. It may be desirable to remove unreacted monomer and/or free poloxamer from the resultant polymer network. This may be accomplished using conventional

15 techniques, such as, by way of example, dialysis or sohxlet extraction.

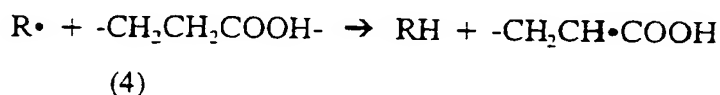
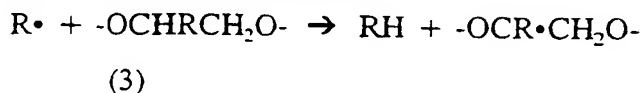
Without intending to be bound by a particular mechanism or structure, the following scheme represents a possible chemical mechanism for the formulation of the system here described. These mechanisms are presented by way of explanation and are no way limiting of the invention. It is contemplated that these or other mechanistic

20 routes may in fact occur in the formation of the polymer network of the present invention.

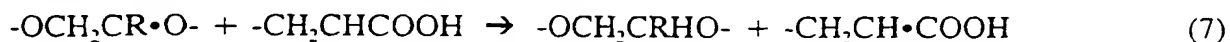
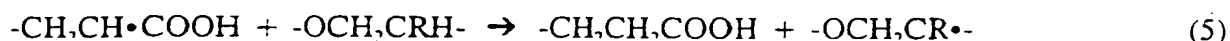
I. Initiation



25 II. Hydrogen Abstraction



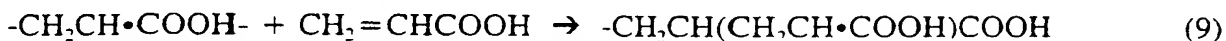
30 III. Chain Transfer



IV. Propagation



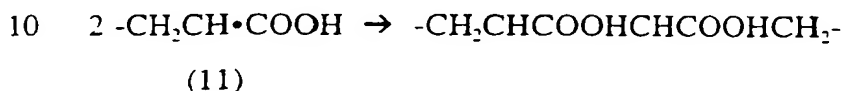
5 V. Side Chain Branching Off AA Backbone



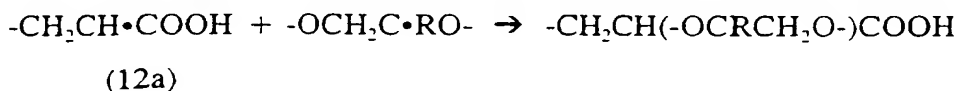
VI. AA Branching Off Poloxamer Backbone



VII. Homogenous Termination



VIII. Heterogenous Termination with Bonding of Pluronic to PAA



15.

The scheme for bonding of poloxamer to acrylic acid may involve initiation (Eq. 1), hydrogen abstraction from the propylene or ethylene moiety of the poloxamer (Eq. 3), and attachment to acrylic acid via addition across the unsaturated bond (Eq. 10). Propagation (Eq. 8) leads to the final PAA.

20 Alternatively, the mechanism may proceed by initiation according to Eqs. (1) and (2), propagation to form PAA (Eq. 8), a chain transfer reaction to generate a reactive poloxamer moiety (Eq. 5), followed by addition of the reactive poloxamer moiety to the unsaturated bond of acrylic acid (Eq. 10) and subsequent propagation of the PAA chain.

25 Thus, the polymer network may include a plurality of poly(acrylic acid) units bounded to a single poloxamer unit, or alternatively, a plurality of poloxamer units bound to a single PAA backbone. Combinations of these alternatives are also a possibility.

30 Reverse phase polymerization may be used to prepare polymer network beads by dispersion of the poloxamer and acrylic acid monomer mixture in a nonpolar solvent

such as hexane or heptane. The aggregating polymer/monomer solution is dispersed with agitation in the nonpolar solvent in order to suspend droplets of the solution. Polymerization of the monomer is initiated by conventional means (i.e., addition of an initiator or irradiation) in order to polymerize the monomer and form responsive
5 polymer network beads. See U.S.S.N. 08/276,532 filed July 18, 1995 and entitled "Useful Responsive Polymer Gel Beads" for further information on the preparation of polymer gel beads, herein incorporated by reference. Such a method may be particularly desirable to provide a heat sink for the heat generated in the exothermic polymerization reaction.

10 The polymer network complexes and aqueous gelling solutions of the present invention may be understood with reference to the following examples, which are provided for the purposes of illustration and which are in no way limiting of the invention.

Example 1. This example describes the synthesis of a polymer network and an
15 aqueous responsive polymer network solution prepared using a triblock polymer of poly(ethylene glycol) and poly(propylene glycol), Pluronic® F27 polyol, and poly(acrylic acid). This example also characterizes the gelation and the physical properties of the resultant polymer network.

Synthesis. Block copolymer of poly(propylene glycol) (PPG) and poly(ethylene glycol) (PEG) having triad ABA structure $(\text{PEG})_A(\text{PPG})_B(\text{PEG})_A$ (Pluronic® F127 NF polyol, Poloxamer 407 NF polyol, where "F" means Flakes, "12" means $12 \times 300 = 3600$ - MW of the PPG section of the block copolymer, "7" PEG in the copolymer is 70 wt%, and nominal molecular weight is 12,600) from BASF (3.0 g) was dissolved in 3.0 g acrylic acid (Aldrich). This represents a substantially 1:1 weight ratio of Pluronic®
20 F127 polyol and poly(acrylic acid). The solution was deaerated by N_2 bubbling for 0.5 h and following addition of 100 ml of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer.

Viscosity measurements. A known amount of the resultant polymer was
30 suspended in 100 ml deionized water into which NaOH was added. Following swelling

for 3 days while stirring, the pH of the resulting fine suspension was adjusted to 7. Samples of 15 ml each were taken, and pH in each vial was adjusted to desired value by addition of 1 M HCl or NaOH. Samples were then kept overnight and their viscosities were measured at different temperatures using Brookfield viscometer using either an
5 SC4-18 or an SC4-25 spindle.

A control experiment was done with a physical blend of Pluronic® F127 polyol and poly(acrylic acid) (MW 450,000) available from Aldrich. Pluronic® F127 polyol and poly(acrylic acid) were dissolved together in deionized water at 1 wt% total polymer concentration and the resultant solution was adjusted to pH 7, stirred and kept
10 in refrigerator. The responsiveness of the polymer network composition and the physical blend to temperature and pH is illustrated in figs. 1, 11, and 12. Figs. 1 and 2 clearly demonstrate that the synthetic route outlined above resulted in a polymer network system that is sensitive to pH and temperature of the environment. Note that the liquid-gel transition is very sharp, occurring over a very small temperature change of pH (see Figure 11). Figure 12 is a viscosity vs. temperature graph comparing the
15 gelling characteristics of the responsive polymer network composition and the physical blend. The blend prepared by physically mixing the triblock PEG/PPG/PEG polymer and poly(acrylic acid) did not exhibit viscosifying effect either as a function of temperature or pH.

20 It was generally observed that 0.5 - 5 wt% polymer network compositions made of Pluronic® F127 polyol and poly(acrylic acid) viscosify at temperatures of around 30°C and higher if pH is adjusted to 6 or higher. The gelling effect was observed in polymer network compositions standing 3 months or longer. Repeated heating and cooling of responsive polymer network compositions did not cause deterioration of the
25 polymer network or the gelling effect. Solutions of either Pluronic® F127 polyol or poly(acrylic acid) (1-5 wt% in water, adjusted to pH 6 or higher) or physical blends of the two lacked the reverse thermal gelling effects found for polymer network compositions.

Example 2. this example describes a standard operating procedure for the
30 manufacture of the reversible gelling polymer network.

The procedure is based upon a 50 liter production. A NaOH solution was prepared by dissolving 131.8 g NaOH pellets in 131.8 mL DI water (50% solution). The NaOH was allowed to dissolve completely. The NaOH solution will be used to convert a percentage of the acrylic acid to sodium acrylate in situ. Acrylic acid monomer (4 kg) is charged into a monomer feed tank and agitated at 250 rpm. NaOH is added slowly. The precipitate formed as the acrylic acid is neutralized to sodium acrylate is allowed to dissolve. Pluronic® F 127 (3.5 kg) is slowly added to the monomer feed tank. Pluronic® F127 is dissolved under continued agitation. Norpar 12 (a refined C-12 alkane) is added to the reaction vessel (37 L). The mixture is agitated at 100 rpm. Stabilizer solution of Ganex V-126 is prepared in 2L Norpar 12 and added to the reactor under agitation.

A reaction vessel was degassed using a nitrogen sparge introduced from the bottom of reactor and was continued throughout the reaction. Initiator (13.63 g Lauryl peroxide and 4.23 g Vazo 52 in 0.7 kg acrylic acid monomer) is introduced into the monomer solution. the monomer solution was transferred to the reaction vessel. Agitation was increased to 150 rpm. Nitrogen sparging continued for an additional 20 minutes, and then heating began. heating began at a rate of 0.5 -1.0°C/min up to 75°C. The reaction began to exotherm at about 45-50°C and is allowed to continue without cooling until a maximum is reached. It is then cooled to 75°C using forced cooling. The reaction continued for 12 hours and was then cooled to 35°C. The slurry was transferred into pails and the polymer beads were allowed to settle.

The slurry was filtered through Buchner Funnels with filter paper (11 µm pore size) until the bulk of the Norpar had been removed from the beads. The beads were washed three times with heptane. The filtered beads were transferred to a Pyrex drying tray and spread on the tray in a uniform layer. The beads were dried under vacuum for 4 hours at 40-50°C. The dried beads were analyzed as follows.

Elemental analysis. The elemental analysis was performed by Quantitative Technologies, Inc., Whitehouse, NJ using a Perkin Elmer 2400 CHN Elemental Analyzer. Analysis provided C (52.49%), H (7.50%), N (<0.05%), the balance assumed to be oxygen (39.96%).

Thermal Gravimetric Analysis (TGA). The TGA method was performed by Massachusetts Material Research, Inc., West Boylston, MA using a Dupont TGA model 295. The assay was run using a temperature ramp from 30 to 500°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The data was analyzed using the first derivative of the curve and using maxima and minima to mark transitions. The moisture content was also calculated in this manner. The first derivative yielded three maxima. The first transition (moisture) was 3.0% by weight, the second transition was 14.0% by weight, and the third was 67.02% by weight. Residue (15.98%) remained.

10 Molecular weight determination by gel permeation chromatography (GPC). The molecular weight was determined by GPC on a Hewlet Packard 1100 Liquid Chromatography system with a Viscotech T60 Triple Detector system. Three Waters Ultrahydrogel columns, 1000, 500 and 250 Å, were used for the separation. The mobile phase was 0.1 M NaNO₃ and 0.01 M K₂HPO₄ salt solution, pH adjusted with phosphoric acid to a pH of 8.0 ± 0.1. the flow rate for the separation was 0.9 mL/min. The column temperature was maintained at 15°C. The injection volume for the assay was 50 µL. A PEG molecular weight standard of 23,000 Daltons was used to align the detectors. The result for the assay were:

20 M_n: 341,700 Daltons
 M_p: 1,607,000 Daltons
 M_w: 2,996,000 Daltons

25 Free poloxamer determination by GPC. The amount of free (unbound) poloxamer in the polymer matrix was determined using the above GPC method and comparing the poloxamer peaks to that of a standard poloxamer solution. The typical result is approximately 18-22% free poloxamer by weight.

30 The effect of both the bonded and non-bonded poloxamer on the gelation properties of the responsive polymer network has been determined by extraction of the non-bonded poloxamer from the material. Such extraction studies have established that the graft co-polymer alone exhibits the characteristic reverse thermal gelation of the composition; however, the presence of non-bonded poloxamer component modulates

the gelation process. The non-bonded poloxamer component can affect the temperature of transition (from liquid to gel) and the degree of transition and assists in a more controlled and reproducible transition.

Bound poloxamer determination by ethylene oxide (EO) titration. The EO
5 titration was performed as follows. A 5 gm sample of the product polymer was extracted in dichloroethane for three hours at reflux temperatures. The solid is removed and dried under a vacuum for 12 hours at room temperature. The dry material is then analyzed using ASTM method D 2959-95, "Standard Test Method for Ethylene Oxide Content". The amount of EO in the sample is related to the amount of poloxamer
10 bound to the polymer. The typical result is approximately 15% by weight of EO.

The relative amount of free poloxamer may be varied dependent upon the relative proportions of starting materials and the method of polymerization. Although the residual solids presumably contain only poloxamer which is bounded to the poly(acrylic acid), i.e., a graft co-polymer, the material still shows strong
15 viscosification when it is neutralized and dissolved in water. However, the temperature of viscosification is increased substantially and the degree of viscosification per gram of total solids is increased by removal of free poloxamer. Thus, the free poloxamer plays a role in modifying the extent and temperature of viscosification. The poloxamer undergoes conformational changes and changes to the critical micelle concentration as a
20 function of temperature. The poloxamer will change from an open, non-aggregated form to a micellular, aggregated form with changes in temperature.

Residual acrylic monomer determination by gas chromatography (GC). The residual acrylic acid monomer was determined by GC analysis using a Hewlet Packard GC 5890A, using a HP-FFDAP-TPA 10 m x 0.52 mm x 1 μ m column. The sample
25 was extracted and run in methanol. Using an internal standard ratio, the sample was compared to a one point calibration. The typical results for this assay were below 70 ppm acrylic acid monomer.

Residual Norpar solvent by GC. The residual Norpar in the sample was determined by GC using the above method and comparing the Norpar peaks to that of a
30 standard. The typical results were below 1.5 wt%.

UV-vis spectrum. Optical clarity data of UV-vis spectrophotometer was obtained. A 1.0% solution in water was prepared and measured at 420 nm. Transmittance (%) was typically greater than 90%.

Differential scanning calorimetry (DSC). The DSC was performed by
 5 Massachusetts Material Research, Inc., West Boylston, MA using a temperature ramp from 30 to 350°C at 5°C/min. The resolution for the system was set to 4 (1.0°C/min for all slope changes). The assay yielded one endothermic event at 265°C, typically 270 J/g.

Examples 3-9. These examples describe the synthesis of several reversible
 10 thermal gelling polymer networks prepared using a variety of poloxamers and poly(acrylic acid). The gelation and the physical properties of the resultant polymer network compositions are reported in Table 2.

Table 2

15	Example	Poloxamer	Poloxamer Composition	Polox- amer: PAA	Trans. Temp.	Comments
	3	Pluronic® F88 Prill polyol	2400 MW PPG; 80 wt% PEG; nominal MW 11,400	1:1	48°C	viscosity response curve shown in Figure 13
	4	Pluronic® F127 NF polyol	3600 MW PPG; 70 wt% PEG; nominal MW 12,600	1:1	30°C	pentaerythritol triallyl ether crosslink agent used
	5	Pluronic® P104 polyol	3000 MW PPG; 40 wt% PEG; nominal MW 5,900	1:1	28°C	viscosity response curve shown in Figure 14
	6	Pluronic® P123 polyol	3600 MW PPG; 30 wt% PEG; nominal MW 5,750	1:1	25°C	viscosity response curve shown in Figure 15
20	7	Pluronic® F127/ Pluronic® F108 polyol blend (1:1)	as above	1:1.7	42°C	polymer solid formed, dried; resolubilized in neutralizing solution
	8	Pluronic® F88 polyol	as above	1:1.7	80°C	polymer solid formed, dried; resolubilizing in neutralizing solution

9	Pluronic® F127/ Pluronic® F88 polyol blend (1:1)	as above	1:1.7	85°C	polymer solid formed, dried; resolubilizing in neutralizing solution
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Example 10. The following example demonstrates the effect of hydrophilic/hydrophobic ratio on the gelling temperature. Polymer network compositions were prepared from the following poloxamers shown in Table 3.

Table 3. Composition of Poloxamers Investigated.

triblock polyol polymer composition	MW of PPG block	wt % of PEG block
P103 (PEG) ₃₇ (PPG) ₅₆ (PEG) ₃₇	3250	50
P104 (PEG) ₂₅ (PPG) ₅₆ (PEG) ₂₅	3250	40
P105 (PEG) ₁₆ (PPG) ₅₆ (PEG) ₁₆	3250	30

Table 3 shows that in this series, the fraction of PEG is reduced when the molecular weight of the PPG block is kept constant. Linse (*Macromol.* 26:4437-4449 (1993)) report phase diagrams for these copolymers in water were calculated and it was shown that two-phase boundaries corresponding to the beginning of aggregation are almost unaffected by the molecular mass, given a constant PEG/PPG ratio, whereas these boundaries shifted to lower temperature as the PEG content of the polymer is reduced at constant mass. The strong dependence of the PEG/PPG ratio is a consequence of the differing solubilities of PEG and PPG in water at the elevated temperatures. Thus, one would suppose that aggregation that causes viscosification in the responsive polymer network composition should shift to lower temperature as PEG fraction decreases.

The poloxamer (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 20 min. and following addition of the 100:1 of freshly prepared saturated solution of ammonium persulfate in deionized water was kept at 70°C for 16 h resulting in a strong whitish polymer. A sample of the polymer obtained

(0.4 g) was suspended in 40 ml deionized water into which NaOH was added. Suspended responsive polymer network particles were allowed to dissolve under constant stirring. The resulting 1 wt% polymer network solution were subjected to the viscosity measurement at shear rate of 132 or 13.2 sec⁻¹ using a SC4-18 spindle. It can be seen from Figure 16 that, firstly, viscosity of the 1 wt% responsive polymer network solutions before viscosification (at 20-24°C) decreases in the series

(PEG)₃₇(PPG)₅₆(PEG)₃₇(F103) > (PEG)₂₅(PPG)₅₆(PEG)₂₅(F104) > (PEG)₁₆(PPG)₅₆(PEG)₁₆(F105) and, secondly, the temperature at which gelation shifts from about 45°C for (PEG)₃₇(PPG)₅₆(PEG)₃₇ to about 35°C for (PEG)₂₅(PPG)₅₆(PEG)₂₅ and (PEG)₁₆(PPG)₅₆(PEG)₁₆. Both results are in excellent agreement with the theory set forth in Linse.

Example 11. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of the protein hemoglobin from poloxamer:poly(acrylic acid) polymer network is described.

Synthesis. Pluronic® F127 (3.0 g) was dissolved in 3.0 g acrylic acid. The solution was deaerated by N₂ bubbling for 0.5 h and following addition of 100 Fl of freshly prepared saturated solution of ammonium persulfate (Kodak) in deionized water was kept at 70°C for 16 h resulting in a transparent polymer. The resultant responsive polymer network obtained (5 g) was suspended in 95 ml deionized water into which NaOH was added. The resulting suspension was allowed to swell for 7 days.

Hemoglobin loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 0.25 mg/ml solution of human hemoglobin (Sigma) in deionized water adjusted to pH 8. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the hemoglobin-loaded responsive polymer network and 6 ml of phosphate-buffered saline

(pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 0.25 mg/ml hemoglobin solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples of the receiver phase was withdrawn from time to time and their absorbance was measured spectrophotometrically at 400 nm. To
5 calculate hemoglobin concentrations, corresponding calibration curves (absorbance in PBS versus hemoglobin concentration) were generated. The results of the kinetic experiment are presented in Figure 17. It can be seen that the rate of hemoglobin release from the polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in the polymer network at elevated
10 temperatures (see Figure 1). The protein released from the polymer network composition still retained its native structure, as was determined by comparison of UV-vis spectra of release hemoglobin and natural hemoglobin.

Example 12. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of
15 release of the protein lysozyme from a polymer network is reported.

Lysozyme loading and release. A 5 wt% responsive polymer network composition (3 g) was allowed to swell for 16 h in 10 ml of 1 mg/ml solution of chicken egg-white lysozyme (Sigma) and 1.5 mg/ml sodium dodecyl sulfate (Aldrich) in deionized water adjusted to pH 8.5. The resulting mixture was well shaken and
20 placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by a magnetic bar. The cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the lysozyme-loaded responsive
25 polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 1 mg/ml lysozyme solution. After the feed solution had been loaded into the cell, the kinetic time commenced. Samples were withdrawn and their absorbance measured spectrophotometrically at 280 nm. A calibration curve was prepared for lysozyme concentration ranging from 0
30 mg/ml to 0.5 mg/ml in phosphate buffered saline. The results of the kinetic experiment

are presented in Figure 18. It can be seen that the rate of lysozyme release from the responsive polymer network composition was substantially lowered at 37°C when compared to that at 25°C, because of viscosity increase in responsive polymer network at elevated temperatures (see Figure 1).

5 In order to demonstrate the retention of the enzymatic activity of lysozyme, the lysozyme released from the responsive polymer network composition was assayed using *Micrococcus lysodeikticus* cells and compared to that of original lysozyme. The enzymatic activity of lysozyme was the same, within the error of the assay (15%), as that of the original lysozyme. Control without lysozyme in presence of sodium dodecyl
10 sulfate did not show any appreciable lysis of the cells.

Example 13. The following example is related to release of an active agent from a poloxamer:poly(acrylic acid) polymer network. Drug loading and kinetics of release of insulin from a responsive polymer network composition is reported.

Insulin loading and release. A 5 wt% responsive polymer network composition
15 (3 g) was allowed to swell for 15 h in 10 ml of 5 mg/ml solution of bovine Zn^{2+} -insulin (Sigma) in deionized water adjusted to pH 7. The resulting mixture was well shaken and placed into the feed chambers of customized vertical, static, Franz-like diffusion cells made of Teflon. The feed and receiver chambers of the diffusion cells were separated by mesh screens (#2063). The receiver chamber was continuously stirred by
20 a magnetic bar. the cells were allowed to equilibrate to either 25 or 37°C (in an oven). The feed and receiver phases consisted of 1 g of the insulin-loaded responsive polymer network and 6 ml of phosphate-buffered saline (pH 7.4), respectively. In the control experiment, the feed phase was made of 1 g of 5 mg/ml insulin solution. After the feed solution had been loaded into the cell, the timing commenced. Samples were
25 withdrawn and their absorbance was measured spectrophotometrically at 280 nm. A calibration curve was prepared for insulin concentration ranging from 0 mg/ml to 1.25 mg/ml in phosphate buffered saline. The results of the kinetic experiment are presented in Figure 19. The rate of insulin release from responsive polymer network was substantially lowered at 37°C when compared to that at 25°C, because of viscosity
30 increase in responsive polymer network at elevated temperatures (see Figure 1).

Example 14. This example demonstrates the preparation of a sterile reversibly gelling polymer network aqueous composition and the stability of the composition to sterilization. The polymer network is prepared as described in Example 1, except that the composition is prepared at 2 wt% Pluronic® F127 polyol/poly(acrylic acid). After dissolution of the 2 wt% polymer network in water, the viscosity is measured. The composition then is sterilized by autoclaving at 121°C, 16 psi for 30 minutes. Viscosity is determined after sterilization. The corresponding curves for viscosity (a) before and (b) after sterilization are shown in Figure 20 and establish that minimal change in the viscosity profile of the material has occurred with sterilization.

Examples 15-30. These examples show additives which may be used to affect the transition temperature overall viscosification of the polymer network composition. A 1 wt% polymer network was prepared in deionized water at pH 7 in which a variety of additives were included in the composition. The effect of the additive was determined by generation of a Brookfield viscosification curve. Results are reported in Table 4.

Table 4.

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
15	1,2-methyl pyrrolidone (5)	I (1.8)	N
16	Rhodapex CO-436 (2)	I (1.6)	N
17	Dow Corning 190 (2)	I (5)	I (150)
18	isopropyl alcohol (0.5)	I (3.1)	I (45)
19	Pluronic® L122 (1)	D (4.4)	D (13)
20	Pluronic® F88 (1)	N	I (41)
21	Tween 80 (0.5)	N	I (18)
22	Germaben® II (1)	D (9)	I (100)
23	Iconol NP-6 (1)	D (9)	I (500)
24	Plurafac C-17 (0.5)	I (5.2)	D (36)
25	Dow Corning 193 (0.75)	I (4.1)	D (12)

Example No.	Additive (wt%)	Effect of additive on:	
		Transition Temp. (°C)	Final Viscosity (% change)
26	glycerin (5)	D (2)	N-
27	UC 50-HB 170/EO/PO random copolymer (0.5)	N	N
28	PVP K15 (1)	N	N
29	MAPTAC (1)	N	D (8)
30	potassium chloride (0.25)	N	D (34)

I = increase; D = decrease; and N = no change

Example 31. Because of the surfactant nature of the polymer network composition coupled with the gelation effect of the polymer network composition, it is possible to prepare formulations which are 100% water-based, but which are lubricous and thick.

Formulations including a nonionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 5.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Emulsifying Wax NF ¹	2.5
Mineral Oil	5.0

¹ Polowax available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100 % w/w and allowed to mix to homogeneity. This formulation contains a nonionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Formulations including a cationic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 6.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Behentrimonium Methosulfate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Incroquat Behenyl TMS available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added and allowed to mix to homogeneity. This formulation contains a cationic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Formulations including an anionic surfactant formulation: An O/W (oil-in-water) emulsion was made by combining the following ingredients utilizing conventional mixing techniques:

Table 7.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Cetearyl Phosphate (and) Cetearyl alcohol ¹	2.5
Mineral Oil	5.0

¹Crodafos CES available from Croda

Into a vessel equipped with a high efficiency homogenizer, the formula amount of all ingredients is added, water is added to 100% w/w and allowed to mix to homogeneity. This formulation contains an anionic surfactant and gives an emulsion that is fluid at room temperature but viscosifies above 32°C.

Example 32. Acne Medication: An oil-free, clear, anti-acne treatment is made by combining the following ingredients utilizing conventional mixing techniques:

Table 8.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Salicylic Acid	2.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
USP Purified Water	72.2

¹Germaben® II available from Sutton Laboratories

To one vessel, equipped with a Lightnin' Mixer with a 3 blade paddle prop, the full amount of USP Purified Water to 100% w/w is added. While maintaining the temperature, with moderate to vigorous mixing, the formula amount of Disodium EDTA, Citric Acid, DL-Panthenol, Glycerin, Salicylic Acid, and Germaben® II is added. These materials are allowed to dissolve at 50°C. After dissolution, the vessel is then cooled to 20°C. To another vessel, equipped with a high efficiency homogenizer, the formula amount of responsive polymer network is added. The responsive polymer network vessel is then cooled to 4°C. After cooling, while vigorously homogenizing, the contents of the first vessel is added to the second vessel, and allowed to mix to homogeneity.

The composition displays a flowable clear jelly appearance with excellent spreadability and absorption characteristics at room temperature, and after heating the formulation to 32°C, the composition thickens to a gel-like consistency.

Example 33. (a) Oil-free Moisturizer (formulation I): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 9.

Ingredient	% w/w
10 % wt. 1:1 responsive polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
PPG-2 Myristyl Ether Propionate	3.0
DL-Panthenol	0.5
Germaben® II ¹	0.1
Disodium EDTA	0.2
Citric Acid	0.01
USP Purified Water	71.19

¹Germaben® II available from Sutton Laboratories

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The viscosity vs. temperature curve is shown in Figure 21 and demonstrates that addition of adjuvants to the composition significantly enhances the responsive polymer network maximum viscosity (>900,000 cps). The use of the poloxamer:poly(acrylic acid) polymer network in the formulation also imparts a unique viscosification effect after application to the skin, which is not evident in typical commercial O/W emulsion formulations (See Figure 21b).

(b) Oil-free Moisturizer (formulation II): An oil-free, lubricous moisturizer was made by combining the following ingredients utilizing conventional mixing techniques:

Table 10.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	20.0
Glycerin USP	5.0
Carbopol 980	1.0

Ingredient	% w/w
D-Panthenol, propylene glycol	1.0
Preservative	1.0
Hydrolyzed protein (and) hyaluronic acid	0.5
Sodium hydroxide	0.2
USP Purified Water	90

5

The above ingredients were added and processed as described above for the
 10 acne composition. The composition displayed a flowable creamy lotion appearance
 with excellent emolliency, spreadability and absorption characteristics at room
 temperature. After heating the formulation to above 26°C, the composition thickened
 to a gel-like consistency. The addition of adjuvants to the composition significantly
 enhances the polymer network maximum viscosity.

15 Example 34. Sunscreen Lotion. An oil-free, lubricous sunscreen lotion was
 made by combining the following ingredients utilizing conventional mixing techniques:

Table 11.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	2.0
Glycerin USP	8.0
Carbopol 980	1.0
Parsol MCX	7.0
Myristyl Ether Propionate	5.0
25 Preservative	1.0
Cyclomethicone	1.0
Sodium hydroxide	0.2
USP Purified Water	74

20

25

30

The above ingredients were added and processed as described above for the
 acne composition. The composition displayed a flowable creamy lotion appearance

with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

- 5 Example 35. Facial mask. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 12.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	1.0
Polyvinyl alcohol	6.0
Polyvinylpyrrolidone (20%)	5.0
D-panthenol, propylene glycol	1.25
Propylene glycol	1.25
USP Purified Water	85.5

10 The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

- 20 Example 36. Facial toner. A face mask was made by combining the following ingredients utilizing conventional mixing techniques:

Table 13.

Ingredient	% w/w
1:1 polymer network as prepared in Example 1	0.01
Hydroxyethyl ceryldimonium phosphate	1.00
PEG-40 hydrogenated castor oil	2.00

Ingredient	% w/w
D-panthenol, propylene glycol	0.50
Glycerin	2.00
Witch hazel extract	5.00
USP Purified Water	88.49

5

The above ingredients were added and processed as described above for the acne composition. The composition displayed a flowable creamy lotion appearance with excellent emolliency, spreadability and absorption characteristics at room temperature. After heating the formulation to above 26°C, the composition thickened to a gel-like consistency. The addition of adjuvants to the composition significantly enhances the polymer network maximum viscosity.

Example 36. Solubilization studies of model hydrophobic agents in the poloxamer:poly(acrylic acid) polymer network: estradiol and progesterone. This example is presented to demonstrate the solubilization of a hydrophobic agent in the polymeric network. Progesterone and estradiol were used as the hydrophobic agents in this model solubilization study.

Acrylic acid (99%), fluorescein (98%), β -estradiol (98%), and progesterone (98%) were all obtained from Aldrich and used as received. Pluronic® F127 NF was obtained from BASF. Poly(oxyethylene-b-oxypropylene-b-oxyethylene)-g-poly(acrylic acid) copolymers (responsive polymer network) were synthesized by free-radical polymerization of acrylic acid in the presence of poloxamer as described above. The polymer network copolymers discussed here were composed of about 1:1 ratio of PAA to poloxamer. The rheological properties of polymer network were assessed using LVDV-II+ and RVDV-II+ Brookfield viscometers. The microscopic light scattering of 21 nm poly(styrene) latex particles in deionized water and 1 wt% reversibly gelling polymer network was measured using He-Ne laser as described previously (see Matsuo, E.S., Orkisz, M., Sun, S.-T., Li, Y., Tanaka, T., Macromolecules, 1994, 27, 6791). The solubility of fluorescein and hormones in aqueous solutions was measured by the equilibrium of excess solubilize with the corresponding solution following

removal of undissolved species by centrifugation and filtration. Hydrophobic agents were assayed spectrophotometrically at 240 (progesterone) or 280 nm (estradiol), or by using 70/30 w/w H₂SO₄/MeOH (Tsilifonis-Chafetz reagent). In vitro hormone release studies were conducted using thermostated, vertical Franz cells. Spunbonded
5 polypropylene microfilters (micron retention, 15-20) were used as a membrane separating feed and receiver phases in Franz cells. The responsive polymer network, water, ethanol, and 20% PEG in water were observed to wet the membrane. The receiver solution consisted of 20 w% PEG in water (pH 7) and were stirred by magnetic bars. The feed phases composed of responsive polymer network were loaded
10 with either estradiol or progesterone. Each hormone was dissolved in ethanol and the resulting solution was added into the responsive polymer network.

Equilibrium solubility vs. temperature plots for estradiol and progesterone (partition coefficient octanol/water (P) 7200 and 5888, respectively), in aqueous solutions of Pluronic® F127 polyol and responsive polymer network are presented in
15 Figure 22. It can be seen that increasing temperature and concentration (C) of polymers in the solution raises the amount of the hormone dissolved. In Figure 22a, vertical lines represent critical micellar temperatures (CMT) for corresponding Pluronic® F127 polyol solutions. It is interesting to note that the slope of the solubility-temperature plots increased as temperature reached CMT, indicating that
20 solubilization in the Pluronic® solutions was predominantly due to the formation of micelles. Similar trend was observed in the responsive polymer network solutions. The S values in 5% aqueous solutions of branched PAA did not exceed 15 and 40 µg/mL at 60°C for estradiol and progesterone, respectively. The solubility values found for responsive polymer network were the same as S in parent Pluronic® solutions
25 of equivalent concentrations. Therefore, it may be suggested that solubilization behaviors of the responsive polymer network are governed by the properties of the poloxamer incorporated into it. Thermodynamic parameters of the solubilization process with responsive polymer network were calculated using the same approximations as in the micellar solubilization with Pluronic® polyols. See. Saito, Y.,
30 Kondo, Y., Abe, M., Sato, T., Chem. Pharm. Bull., 1994, 42, 1348. Namely,

partition coefficient P was estimated from equilibrium solubilities of estradiol in responsive polymer network and water:

$$P = S_{SH}/S_W \quad (13)$$

by extrapolating the solubility plots of the steroid in Figure 22 to 100% responsive polymer network. Using P values obtained from data in Figure 23, we calculated the standard free energy change (ΔG), standard enthalpy of solubilization (ΔH), and standard entropy of solubilization (ΔS) using the following expressions:

$$\Delta G = -RT \ln P; \Delta H = -R \Delta \ln P / \Delta(1/T); \Delta S = (\Delta H - \Delta G)/T \quad (14)$$

Thermodynamic parameters obtained along with P values are given in Table 14.

Apparent partition coefficients and thermodynamic parameters for solubilization of estradiol by responsive polymer network.

Table 14.

T, K	$P = S_{SH}/S_W$	ΔG kJ/mol	ΔH kJ/mol	ΔS J/mol
277	490	-14.3	4.72	68.6
293	520	-15.2		52.0
310	660	-16.7		53.9
323	660	-17.4		54.0
333	660	-18.0		54.0

Negative ΔG values indicate spontaneous solubilization at all temperatures, whereas positive ΔH shows that the solubilization was endothermic, similar to the solubilization of estriol, as well as indomethacin, by the poloxamer. Notably, ΔS of solubilization was always positive, suggesting that the more ordered water molecules surrounding hydrophobic estradiol molecules moved to the less ordered bulk phase when the estradiol was transferred to the hydrophobic core of PPG segments in responsive polymer network. The aggregation of the PPG segments at elevated temperatures provides not only temporary cross-linking in the gel, but also a thermodynamically "friendly" environment for the hydrophobic drugs. Indeed, one can express the free energy of formation of the aggregate core-water interface in responsive

polymer network as:

$$\Delta G = [\sigma P_w(1-\phi) + \sigma W_D \phi](4\pi R^2/n) \quad (15)$$

where σP_w and σW_D are the interfacial tensions between pure PPO polymer and water and between water and the drug, respectively; ϕ is the volume fraction of the drug within the PPO core; R is the effective radius of the core; and n is the aggregation number.

Equation (3) shows that solubilization of a hydrophobic drug of high σW_D should increase the stability of the aggregate. The solubilization process was found to decrease the critical micellization concentration and substantially increase the micellar core radius in Pluronic surfactants (Hurter, P.N., et al., "In Solubilization in Surfactant Aggregates", Christian, S.D., Ed., Marcel Dekker, New York, 1995). A similar trend is indicated by the lowering the onset of gelation of the responsive polymer network upon solubilization of fluorescein (LogP 2.1) (Figure 24). The solubilization of hydrophobic drugs by responsive polymer network, analogous to the micellar solubilization of drugs by poloxamer, suggests that the responsive polymer network can be an effective vehicle in drug delivery.

Our in vitro study of hormone release from responsive polymer network shows an increase in the initial transport rate with either decreasing total polymer concentration in the formulation or decreasing temperature (Figure 25). These effects are related to the changes in macroscopic viscosity of the responsive polymer network, which erodes more rapidly from the feed phase through the membrane into the receiver compartment as the viscosity decreases (Figure 26). The degree of the responsive polymer network erosion was measured by weighing hormone-loaded responsive polymer network before and after kinetic experiment.

Figure 27 shows that the relative amount of progesterone penetrating into the receiver phase decreased 4-fold with the increase of total polymer concentration, whereas the total relative amount of progesterone stayed almost constant as total polymer concentration in the responsive polymer network increased. This result shows the existence of two routes of transport of hydrophobic drugs in our model system. Firstly, the drug incorporated into aggregates within the responsive polymer network

system can flow through the membrane along with the erosion of the responsive polymer network; secondly, the drug not associated with the responsive polymer network aggregates can diffuse out of the responsive polymer network in the feed phase. The second process should not be related to the viscosity of the responsive polymer network. Indeed, the dynamic light scattering experiment shows no dramatic change of diffusivity of poly(styrene) latex particles in the responsive polymer network as temperature rises thereby increasing macroscopic viscosity more than 10-fold (Figure 28). This result indicates that the viscosity of the responsive polymer network is essentially unaffected on the microscopic scale.

10

Appendix A attached.

APPENDIX A

FUNCTION DEFINITIONS

- | | | |
|----|--|--|
| | Abrasive: abrades, smooths, polishes | Buffer: helps maintain original pH (acidity or basicity) of a preparation |
| 5 | Absorbent powder: takes up liquids. sponge-like action | Carrier: a vehicle or base used for a preparation |
| | Absorption base: forms water-in-oil emulsions | Chelate: form a complex with trace-metal impurities, usually calcium or iron |
| | Acidulent: acidifies, lowers pH, neutralizes alkalis | Colorant: adds color, may be a soluble dy or an insoluble pigment |
| 10 | Amphoteric: capable of reacting chemically either as an acid or a base; amphoteric surfactants are compatible with anionic and cationic surfactants | Conditioner: improves condition of skin and hair |
| | Analgesic: relieves pain | Coupling agent: aids in solubilization or emulsification of incompatible componenets |
| | Antacid: neutralizes stomach acidity | Decolorant: removes color by adsorption, bleaching or oxidaion |
| 15 | Antibacterial: destroys/inhibits the growth/ reproduction of bacteria | Denaturant: used to denature ethyl alcohol |
| | Anti-caking: prevents or retards caking of powders; keeps powders free-flowing | Dental powder: powdered dentifrice |
| | Anti-dandruff: retards or eliminates dandruff | Deodorant: destroys, masks, or inhibits formation of unpleasant odors |
| 20 | Antifoam: suppresses foam during mixing | Depilatory: removes hair chemically |
| | Anti-inflammatory: reduces, suppresses, counteracts inflammation | Detergent: a surface-active agent (surfactant) that cleans by emulsifying oils and suspends particulate soil |
| | Anti-irritant: reduces, suppresses or prevents irritation | Disinfectant: destroys pathogenic microorganisms |
| 25 | Antimicrobial: destroys, inhibits or suppresses the growth of microorganisms | Dispersant: promotes the formation and stabilization of a dispersion or suspension |
| | Antioxidant: inhibits oxidation and rancidity | Dye stabilizer: see Stabilizer |
| | Antiperspirant: reduces or inhibits perspiration | Emollient: softens, smooths skin |
| | Antipruritic: reduces or prevents itching | Emulsifier: a surface-active agent (surfactant) that promotes the formation of water-in-oil or oil-in-water emulsions |
| 30 | Antiseptic: inhibits the growth of microorganisms on the skin or on living tissue | Enzymes: complex proteins produced by living cells that catalyze biochemical reactions at body temperature. |
| | Antistat: reduces static by neutralizing electrical charge on a surface | Fiber: strands of natural or synthetic polymers; for instance, cotton, wool, silk, nylon, polyester |
| 35 | Astringent: contracts organic tissue after application | Film former: solution of a polymer that forms films when the solvent evaporates after application to a surface |
| | Binder: promotes cohesion of powders | Fixative: fixes or sets perfumes; retards evaporation; promotes longer lasting aroma |
| | Bleaching agent: lightens color, oxidizing agent | |
| | Botanical: natural plant derivative | |

- Flavor:** imparts a characteristic taste (and aroma) to edible foods and drinks; sometimes used in lip products
- 5 **Foam booster:** enhances quality and quantity of lather of shampoos
- Foamer:** a surface-active agent (surfactant) that produces foam; an emulsion of air-in-water
- Foam stabilizer:** see Foam booster
- Fungicide:** inhibits or destroys growth of fungi
- 10 **Gellant:** a gelling agent; forms gels; includes a wide variety of materials such as polymers, clays and soaps
- Glosser:** furnishes a surface luster or brightness; usually used in lip or hair products
- 15 **Hair colorant:** see Colorant
- Hair conditioner:** see Conditioner
- Hair dye:** imparts a new permanent or semi-permanent color to hair
- 20 **Hair-set polymer:** polymer and/or resins used to maintain desired hair shape
- Hair-set resin:** see Hair-set polymer
- Hair waving:** see Reducing agent and Neutralizer
- Humectant:** absorbs, holds, and retains moisture
- Hydrotrope:** enhances water solubility
- 25 **Intermediate:** basic chemicals which are chemically modified to obtain the desired function
- 30 **Lathering agent:** a surface active agent (surfactant) that forms a foam or lather on mixing with air in solution; see also Foamer
- Lubricant:** reduces friction, smoothes, adds slip
- Moisture barrier:** retards passage of moisture or water
- 35 **Moisturizer:** aids in increasing the moisture content of the skin through humectant or barrier action
- 40 **Neutralizer:** an oxidizing agent used in hair waving that stops the action of the reducing agent and re-establishes the disulfide linkages in hair
- Oil absorbent:** see Absorbent powder
- Ointment base:** an anhydrous mixture of oleaginous components used as a vehicle for medicaments
- Opacifier:** opacifies clear liquids or solids
- Oxidant:** oxidizing agent, neutralizes reducing agents, bleaching agent
- Pearlant:** imparts a pearlescent texture and luster
- Perfume solvent:** see Solvent and Solubilizer
- Peroxide stabilizer:** see Stabilizer
- Pigment:** a finely powdered insoluble substance used to impart color, luster, or opacity.
- Plasticizer:** plasticizes (makes more flexible) polymeric films or fibers
- Polish:** smoothes; adds gloss and luster
- Polymer:** a very high molecular weight compound consisting of repeating structural units
- Powder:** a solid in the form of fine particles
- Preservative:** protects products from spoilage by microorganisms
- Propellant:** pressurized gas in a container used to expel the contents when pressure is released by opening a valve
- Protein:** naturally occurring complex combinations of amino acids
- Reducing agent:** reduces a chemical compound usually by donating electrons; neutralizes oxidizing agents
- Refatting agent:** adds oils materials to the surface of substrates, e.g., skin and hair
- Resin:** nonvolatile solid or semisolid organic substances obtained from plants as exudates to prepared by polymerization of simple molecules
- Sequestrant:** forms coordination complexes with multivalent positive ions
- Silicone:** polymeric organic silicon compounds which are water-resistant
- Skin protectant:** protects the skin from environmental
- Solubilizer:** solubilizes, usually into aqueous vehicles, normally insoluble materials, such as fragrances, flavors, oils, etc.

- Solvent:** usually liquids capable of dissolving other substances
- Stabilizer:** added to stabilize emulsions and/or suspensions
- 5 **Stimulant:** produces a temporary increase in the functional activity of an organism or any of its parts
- 10 **Surfactant** (surface active agent): lowers surface tension between two or more incompatible phases; soaps, detergents, wetting agents, solubilizing agents and emulsifying agents are typical surfactants; surfactants are classified as anionic, cationic, nonionic and amphoteric; anionic surfactants are negatively charged, cationic surfactants have no electrical charge
- 15 **Suspending agent:** keeps finely divided solid particles in suspension
- 20 **Sweetener:** sweetens to provide a more pleasant taste
- Tanning accelerator:** accelerates the tanning of skin
- Thickener:** thickens or increases viscosity/consistency
- 25 **Thixotrope:** the property of certain gels and emulsions of becoming more fluid or less viscous when shaken or stirred
- 30 **UV absorber:** used as a sunscreen and to protect preparations from degradation by UV radiation
- UVA absorber:** absorbs in the range 320-400 nanometers (nm)
- UVB absorber:** absorbs in the range 290-320 nanometers (nm)
- 35 **Wax:** any of numerous substances of plant, animal or synthetic origin that contain principally esters of higher fatty acids and higher fatty alcohols; free fatty alcohols, fatty acids and hydrocarbons may also be present; waxes derived from petroleum products are mainly high-molecular-weight hydrocarbons
- 40 **Wetting agent:** a surface-active agent (surfactant) that lowers the surface and interfacial tension, facilitating the wetting of surfaces
- 45

FUNCTIONS

- | | | | |
|----|---|--|--|
| | <u>Abrasive</u> | | <u>AHA</u> |
| | Adzuki beans | | Apple (<i>Pyrus malus</i>) extract |
| 5 | Almond (<i>Prunus amygdalus</i>) meal, shell granules | | Apricot (<i>Prunus armeniaca</i>) kernel powder |
| | Aluminum silicate | | Citric acid |
| | Apricot (<i>Prunus armeniaca</i>) kernel powder, shells | | Ethyl lactate |
| | Hydrated silica | | Glycolic acid |
| | Jojoba (<i>Buxus chinensis</i>) seed powder | | Lactic acid |
| 10 | Luffa cylindrica | | Malic acid |
| | Olive stone granules | | Sodium lactate |
| | Oyster shell powder | | Tartaric acid |
| | Peach (<i>Prunus persica</i>) pit powder | | |
| | Peach (<i>Prunus persica</i>) stone granules | | <u>Antiacne</u> |
| 15 | Polyethylene | | Clays (white, yellow, red, green, pink) |
| | Polyethylene HEC granules | | Perfluorodecalin |
| | Polyethylene oxidized, P. spheres | | Salicylic acid |
| | Polystyrene | | Sulfur |
| | Pumice | | |
| 20 | Rice (<i>Oryza sativa</i>) bran | | <u>Anti-aging</u> |
| | Silica and S. colloidal | | Basil (<i>Ocimum basilicum</i>) extract |
| | Sodium chloride | | Carrot (<i>Daucus carota</i>) extract |
| | Walnut (<i>Juglans regia</i>) shell powder | | Catalpa kaempfera extract |
| 25 | <u>Absorption base</u> | | Ceramide 33 (liquid soy extract) |
| | 1,2,6-Hexanetriol | | Crataegus cuneata extract |
| | Kaolin | | Eugenia jambolana extract |
| | Petrolatum | | Fomes fometarius extract |
| | Rice (<i>Oryza sativa</i>) starch | | Fomistopsis pinicola extract |
| 30 | Soy (<i>Glycine soja</i>) sterol | | Ganoderma lucidum oil |
| | Zeolite | | Ginseng (<i>Panax ginseng</i>) extract |
| | | | Hyaluronic acid |
| | <u>Absorbent powder</u> | | Hydrolyzed serum protein |
| | Corn (<i>Zea mays</i>) starch | | Hydrolyzed soy flour |
| 35 | Maltodextrin | | Isachne pulchella extract |
| | Nylon-12 | | Lactoferrin |
| | Oat (<i>Avena sativa</i>) bran, flour, meal | | Lady's Thistle (<i>Silybum marianum</i>) extract |
| | Zeolite | | Ligusticum jeholense extract |
| 40 | <u>Acidulent</u> | | Marine collagen |
| | Acetic acid | | Mushroom (<i>Coriolus versicolor</i>) extract |
| | Citric acid | | Must rose (<i>Rosa moschata</i>) oil |
| | Fumaric acid | | Perfluorodecalin |
| | Glutamic acid | | Quaternium-51 |
| 45 | Glycolic acid | | Rubus thunbergii extract |
| | Hydrochloric acid | | Serum protein |
| | Lactic acid | | Stenocalyx micalii extract |
| | Nitric acid | | Tricholoma matsutake extract |
| | Phosphoric acid | | |
| 50 | Sodium bisulfate | | <u>Antibacterial</u> |
| | Sulfuric acid | | Ammonium iodide |
| | Tartaric acid | | Chlorhexidine |
| | | | Chlorhexidine diacetate, C. digluconate |
| | | | Chlorhexidine dihydrochloride |

- Chlorphenesin
Hexamidine diisethionate
Hexetidine
5 Iceland moss (*Cetraria islandica*) extract
Lactoterrin
Lauralkonium bromide, L. chloride
Laurtrimonium chloride
Laurylpyridinium chloride
Mauritiella armata extract
10 Mushroom (*Cordyceps sbolifera*) extract
Orange blossom extract
Orange (*Citrus aurantium dulcis*) peel extract
PEG-42 Ebiriko ceramides extract
Peppermint (*Mentha piperita*) extract
15 Philodendron (*Phellodendron amurense*) extract
Pine (*Pinus sylvestris*) needle extract
Polymethoxy bicyclic oxazolidine
Quaternium 73
Rubus thunbergii extract
20 Tea tree (*Melaleuca alternifolia*) oil
Triclocarban
Undecylenic acid
- Anticaking**
25 Aluminum starch octenylsuccinate
Calcium stearate
Distarch phosphate
Hydrated silica
Kaolin
30 Magnesium myristate, M. silicate
Polyethylene, micronized
Silica silylate
Sodium aluminum silicate
Zinc stearate
35
- Anticaries agent**
Cetylamine hydrofluoride
Olaflur
Sodium fluoride
40 Stearyl trihydroxyethyl propylenediamine
dihydrofluoride
- Anticellulite**
45 Aminophylline
Bladderwrack (*Fucus vesiculosus*) extract
Butcherbroom (*Ruscus aculeatus*) extract
Carcinia cambogia extract
Fomes fometarius extract
Fomistopsis pinicola extract
50 Ivy extrey
Mushroom (*Coriolus versicolor*) extract
TEA-hydroiodide
Tricholoma matsutake extract
- Antidandruff**
Burdock (*Arctium lappa*) extract
Chloroxylonol
Corydalis ambigua extract
Disodium undecylenamido MEA-sulfosuccinate
Ginger root extract
Inga edulis extract
Mauritiella armata extract
Myristalkonium saccharinate
- PEG-6 undecylenate
Piroctone olamine
Resorcinol
Rosemary (*Rosmarinus officinalis*) extract
Sodium shale oil sulfonate
Stenocalyx micalii extract
Undecylenamide DEA
Willow (*Salix alba*) bark extract
Zinc pyrithione
- Antifungal**
Black walnut (*Juglans nigra*) extract
Coneflower (*Echinacea angustifolia*) extract
Orange blossom extract
Pfaffia paniculata extract
- Anti-inflammatory**
Allantoin polygalacturonic acid
Bisabolol
Black poplar (*Populus nigra*) extract
Brassica rapa-depressa extract
Butcherbroom (*Ruscus aculeatus*) extract
Calendula officinalis extract
Catalpa kaempfera extract
Celastrus paniculata extract
Ceramide 33 (liquid soy extract)
Chaparral (*Larrea mexicana*) extract
Coneflower (*Echinacea angustifolia*) extract
Cornflower (*Centaurea cyanus*) extract
Dipotassium glycyrrhizinate
Euphorium fortunei extract
Duphrasia officinalis extract
Ficus racemosa extract
Golden seal (*Hydrastis canadensis*) root extract
Guaiazulene
Horse chestnut (*Aesculia hippocastanum*) extract
Jujube (*Zizyphus jujuba*) extract
Laminaria japonica extract
Licorice (*glycyrrhiza glabra*) extract
Ligusticum jeholense, L. lucidum extract
Matricaria (*Chamomilla recutita*) extract
Melaleuca uncinata extract
Melia azadirachta extract

	Mulberry (<i>Morus nigra</i>) extract	PVP
	Niacinamide ascorbate	Saccharomyces lysate extract
	Orange (<i>Citrus aurantium dulcis</i>) peel extract	Sodium C12-15 pareth-15 sulfonate
	Orange blossom extract	Sodium lauroamphoacetate
5	Palmetto extract	Soy (Glycine soja) protein
	Palmitoyl collagen amino acids	Undecylenoyl collagen amino acids
	Passion flower (<i>Passiflora laurifolia</i>) fruit extract	Valerian (<i>Valeriana officinalis</i>) extract
	Paulownia <i>imperialis</i> extract	
	Alicyclic acid	Antimicrobial
10	Shea butter (<i>Butyrospermum parkii</i>)	Benzalkonium chloride
	Sodium carboxymethyl beta-glucan	Benzoic acid
	soy (Glycine soja) protein	Benzyl alcohol
	Stearyl glycyrrhetinate	Bromochlorophene
	Stenocalyx <i>micalii</i> extract	2-Bromo-2-nitropropane-1,3-diol
15	Tocopheryl acetate, T. nicotinate	Butylparaben
	Trichomonas <i>japonica</i> extract	Capryloyl collagen amino acids
	Willow (<i>Salix alba</i>) extract	Capryloyl glycine, C. keratin amino acids
	Witch hazel (<i>Hamamelis virginiana</i>) extract	Captan
	withania <i>somniferum</i> extract	Cetethyldimonium bromide
20	Yarrow (<i>Achillea millefolium</i>) extract	Cetyl pyridinium chloride
	Zinc lactate	Chlorothymol
		Chloroxylenol
	Anti-irritant	Citron oil
	Acetyl monoethanolamine	Copper PCA
25	Allantoin	Dichlorobenzyl alcohol
	Allantoin acetyl methionine, A. glycyrrhetic acid	Dilauryldimonium chloride
	Azelamide MEA	Domiphen bromide
	Betaine	Ethylparaben
30	Calendula <i>officinalis</i> extract	Eucalyptus (<i>Eucalyptus globulus</i>) extract
	Cocamidopropyl betaine	Fennel (<i>Foeniculum vulgare</i>) extract
	Coceth-7 carboxylic acid	Garlic (<i>allium sativum</i>) extract
	Cornflower (<i>Centaurea cyanus</i>) extract	Glyceryl caprylate, G. laurate
	Diisostearyl dimer dilinoleate	Hexamidine diisethionate
35	Dipalmitoyl cystine	Hinokitiol
	Green tea extract	Honeysuckle (<i>Lonicera caprifolium</i>) extract
	Hydrolyzed sweet almond protein	Lichen (<i>Usnea barbata</i>) extract
	Hydroxypropyltrimonium gleatin	Myristalkonium chloride
	Lauroyl collagen amino acids	Pentylene glycol
40	1-Lysine lauroyl methionine	Phenethyl alcohol
	Mallow extract	Phenol
	Matricaria (<i>Chamomilla recutita</i>) extract	Phenoxyethanol
	Palmitoyl hydrolyzed milk protein	Phenoxyisopropanol
	Palmitoyl hydrolyzed wheat protein	Phenyl mercuric acetate, P.m. benzoate, P.m. borate
45	Palmitoyl keratin amino acids	o-Phenylphenol
	PEG-12 palm kernel glycerides	Polymethoxy bicyclic oxazolidine
	PEG-28 glyceryl tailowate	Potassium sorbat
	PEG-30 glyceryl monococoate	Propylparaben
	PEG-60 almond glycerides	Ricinoleamodopropyltrimonium ethosulfate
50	PEG-78 glyceryl cocoate	Sage (<i>Salvia officinalis</i>) extract
	PEG-82 glyceryl tailowate	Sodium benzoate, S. pyrrhione
	PEG-200 glyceryl tailowate	Sodium ricinoleate, S. shale oil sulfonate
	Propionyl collagen amino acids	Thimerosal

- Thyme (*Thymus vulgaris*) extract
Thymol
Triclocarban
Triclosan
- 5 Undecylenamidopropyltrimonium methosulfate
Undecylenic acid
Zinc oxide, Z. PCA
Zinc pyrithione, Z. undecylenate
- 10 **Antioxidant**
Ascorbic acid
A. polypeptide
Ascorbyl oleate, A. palmitate
Beta-carotene
- 15 BHA
BHT
t-Butyl hydroquinone
Dilauryl thiodipropionate
Dimyristyl thiodipropionate
- 20 Disodium EDTA
Distearyl thiodipropionate
Dodecyl gallate
EDTA
Erythorbic acid
- 25 Ferulic acid
Grape (*Vitis vinifera*) seed extract
Green tea extract
HEDTA
Hydroquinone
- 30 Hydroquinone-beta-D-glucopyranoside
p-Hydroxyanisole
Lactoferrin
Lysine PCA
Melanin
- 35 Methyl gallate
Niacinamide ascorbate
Nordihydroguaiaretic acid
Oat (*Avena sativa*) extract
Oryzanol
- 40 Pentasodium pentetate
Pentetic acid
Propyl gallate
Retinyl palmitate polypeptide
Rosemary (*Rosmarinus officinalis*) extract
- 45 *Saccharomyces* lysate extract
Sage (*Salvia officinalis*) extract
Sodium ascorbate, S. erythorbate
Sodium metabisulfite
Sodium selenate, S. sulfite
- 50 Superoxide dismutase,
Tea (*Camellia sinensis*) extract
Tetrasodium EDTA
Tocopherol
- Tocopheryl acetate, T. linoleate
Wild marjoram (*Origanum vulgare*) extract
Yeast (*Saccharomyces cerevisiae*) extract (Faex)
- Antiperspirant**
Allantoin-aluminum chlorhydrate
Aluminum capryloyl hydrolyzed collagen
Aluminum chlorohydrate-gly, A. chloride
Aluminum chlorohydrate, A. chlorohydrate
Aluminum PCA, A. sesquichlorohydrate
Aluminum undecylenoyl collagen amino acids
Aluminum zirconium pentachlorohydrate
Aluminum zirconium tetrachlorohydrate
Aluminum zirconium tetrachlorohydrate GLY
Aluminum zirconium trichlorohydrate
Aluminum-zirconium-glycine powder
Sage (*Salvia officinalis*) extract
Tormentil (*Potentilla erecta*) extract
Zirconium chlorohydrate
- Antiseptic**
Aluminum PCA
Azadirachta indica extract
2-Bromo-2-nitropropane-1,3-diol
Calendula amurensis extract
p-Chloro-m-cresol
Clove (*Eugenia caryophyllus*) oil
Crataegus cuneata extract
Dichlorobenzyl alcohol
Entada phaseoloides extract
Eucalyptus (*Eucalyptus globulus*) extract
Golden seal (*Hydrastis canadensis*) root extract
Hexachlorophene
Melia australasica, M. azadirachta extract
Methyl salicylate
Orange (*Citrus aurantium dulcis*) peel extract
Oxyquinoline sulfate
Pfaffia paniculata extract
Potassium abietoyl hydrolyzed collagen
PVP-iodine
Silver nitrate
Sodium salicylate
Sterculia platanifolia extract
Tea tree (*Melaleuca alternifolia*) oil
Tormentil (*Potentilla erecta*) extract
Xanthoxylum bungeanum extract
- Antistat**
Acetamide MEA
Acetamidopropyl trimonium chloride
6-(N-Acetylamino)-4-oxyhexyltrimonium chloride
Alkyl dimethyl betaine

- Babassuamidopropylalkonium chloride
 Behenamidopropyl ethyldimonium ethosulfate
 Behenamidopropyl hydroxyethyl dimonium
 chloride
 5 Carboxymethyl chitin
 Cetethyl morpholinium ethosulfate
 Cetrimonium chloride
 Chitin
 Chitosan
 10 Cocamidopropyl ethyldimonium ethosulfate
 Cocodimonium hydroxypropyl hydrolyzed rice
 protein
 Cocodimonium hydroxypropyl hydrolyzed soy
 protein
 15 Dimethicone hydroxypropyl trimonium chloride
 dimethyl behenamine, D. cocamine
 Dimethyl palmitamine, D. soyamine
 Dimethyl tailowamine
 Dioleamidooethyl hydroxyethylmonium
 20 methosulfate
 Dipalmitoylethyl hydroxyethylmonium
 methosulfate
 N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate)
 ammonium chloride
 25 Erucamidopropyl hydroxysultaine
 Glyceryl monopyroglutamate
 Hydrogenated tailowamine oxide
 Isostearamide propyl dimethylamine
 Lactamidopropyl trimonium chloride
 30 Lauryldimonium hydroxypropyl hydrolyzed
 collagen
 Linoleamidopropyl dimethylamine dimer
 dilinoleate
 Olealkonium chloride
 35 PEG-2 cocamine
 PEG-2 cocomonium chloride
 PEG-2 oleammonium chloride
 PEG-8 caprylic/capric glycerides
 PEG-10 cocamine
 40 PEG-15 soyamine
 PPG-9 diethylmonium chloride
 PPG-25 diethylmonium chloride
 PPG-40 diethylmonium chloride
 Propylene glycol stearate
 45 Quaternium-26, -27, -53, -62, -72
 Rapeseedamidopropyl benzyldimonium chloride
 Rapeseedamidopropyl epoxypropyl dimonium
 chloride
 Silica, colloidal
 50 Sorbitan caprylate
 N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl
 ammonium ethyl sulfate
 Soyethyl morpholinium ethosulfate
 Soyethyldimonium ethosulfate
 Stearalkonium chloride
 Stearamidopropyl benzyl dimonium chloride
 Stearamidopropyl ethyldimonium ethosulfate
 Steartrimonium chloride
 N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl
 ammonium ethyl sulfate
 Wheat germamidopropylethyldimonium
 ethosulfate
Astringent
 Aluminum citrate, A. lactate
 Astragalus sinicus extract
 Astrocaryum murumuru, A. tucuma extract
 Azadirachta indica extract
 Azelamide MEA
 Bearberry (Arctostaphylos uva-ursi) extract
 Birch (Betula alba) leaf extract
 Catalpa kaempfera extract
 Celastrus paniculata extract
 Coccinea indica extract
 Coffee (Coffea arabica) bean extract
 Euphrasia officinalis extract
 Euterpe precatoria extract
 Evening primrose (Oenothera biennis) extract
 Gentian (Gentiana lutea) extract
 Geranium maculatum extract
 Grape (Vitis vinifera) leaf extract
 Henna (Lawsonia inermis) extract
 Hierochloa odorata extract
 Honeysuckle (Lonicera caprifolium) extract
 Hops (Humulus lupulus) extract
 Horesetail extract
 Hypericum perforatum extract
 Ivy extract
 Juniperus communis extract
 Kadsura heteliloca extract
 Kola (Cola acuminata) extract
 Lady's mantle (Alchemilla vulgaris) extract
 Lemon (Citrus medica limonum) extract, peel
 extract
 Lemon bioflavonoids extract
 Lysimachia foenum-graecum extract
 Magnolia spp. extract
 Mauritia flexosa extract
 Maximilliana regia extract
 Melaleuca uncinata, M. wilsonii extract
 Melia australasica extract
 Nettle (Urtica dioica) extract
 Oak (Quercus) bark extract
 Ocimum basilicum, O. santum extract
 Palmetto extract
 Passion flower (Passiflora laurifolia) fruit extract

- Plantain (*Plantago major*) extract
 Polygonum multiflorum extract
 Pterocarpus marsupianus extract
 Raspberry (*Rubus*) extract
 5 Sambucus nigra oil
 Sanguisorbae root extract
 Selinum spp. extract
 Shorea robusta extract
 Tannic acid
 10 Walnut (*Juglans regia*) leaf extract, oil
 Wheat (*Triticum vulgare*) protein
 White nettle (*Lamium album*) extract
 Witch hazel (*Hamamelis virginiana*) extract
 Xanthoxylum bungeanum extract
 15 Zinc lactate
 Ziziphus jujuba extract

Binder

- Aluminum starch octenylsuccinate
 20 Boron nitride
 C20-40, C30-50, C40-60 alcohols
 Calcium stearate
 Cellulose gum
 Dihydroabietyl behenate
 25 Diisostearyl malate
 dioctyl sebacate
 Distarch phosphate
 ethylcellulose
 Gellan gum
 30 Hydrogenated jojoba oil
 Isocetyl alcohol, I. palmitate
 Isopropyl isostearate
 Isostearyl erucate, I. isostearate
 Isostearyl neopentanoate
 35 Maltodextrin
 Methylcellulose
 Microcrystalline cellulose
 Octyl palmitate
 Octyldodecyl myristate
 40 bis-Octyldodecyl stearoyl dimer dilinoleate
 Octyldodecyl stearoyl stearate
 Oleyl oleate
 PEG-20, -75, -150, -240, -350
 Polydipentene
 45 Polyethylene; P. micronized
 PTFE
 PVP
 Sorbitol
 Synthetic wax
 50 Tapioca dextrin
 Tridecyl benenate, T. neopentanoate
 Tridecyl stearoyl stearate
 Trisodium HEDTA

Biol. polymer

- Distarch phosphate
 Dog rose (*Rosa canina*) see extract
 Hydrogen peroxide
 Kojic acid
 Mulberry (*Morus nigra*) extract
 Sanguisorbae root extract

Botanical

- Acacia
 Acacia farnesiana extract
 Agrimony (*Agrimonia eupatoria*) extract
 Alder (*Alnus firma*) extract
 Alfalfa (*Medicago sativa*) extract
 Algae (*Ascophyllum nodosum*) extract
 Algae (*Lithothamnium calcareum*) extract
 Aloe barbadensis, A.b. extract
 Aloe capensis extract
 Alpine Veronica extract
 Althea officinalis extract
 Angelica archangelica extract
 Anise (*Pimpinella anisum*) extract
 Apple (*Pyrus malus*) extract
 Apricot (*Prunus armeniaca*) extract
 Arnica montana extract
 Artemisia capillaris extract
 Artichoke (*Cynara scolymus*) extract
 Asafetida (*Ferula assa foetida*) extract
 Asiasarum _____ extract
 Asparagus officinalis extract
 Astragalus sinicus extract
 Avena (*Geum rivale*) extract
 Avocado (*Persea gratissima*) extract
 Balm mint (*Melissa officinalis*) extract, oil extract
 Banana (*Musa sapientum*) extract
 Barley (*Hordeum vulgare*) extract
 Basil (*Ocimum basilicum*) extract
 Bearberry (*Arctostaphylos uva-ursi*) extract
 Bee pollen extract
 Beet (*Beta vulgaris*) extract
 Betaglucan
 Bilberry (*Vaccinium myrtillus*) extract
 Bioflavonoids
 Birch (*Betula alba*) bark extract, leaf extract
 Birch (*Betula platyphylla japonica*) extract
 Bitter orange (*Citrus aurantium amara*) extract,
 flower extract, peel extract
 Black cohosh (*Cimicifuga racemosa*) extract
 Black currant (*Ribes nigrum*) extract
 Black henna extract
 Black poplar (*Populus nigra*) extract
 Black walnut (*Juglans nigra*) extract
 Bladderwrack (*Fucus vesiculosus*) extract

- Borage (*Borago officinalis*) extract
 Buckthorn (*Frangula alnus*) extract
 Burdock (*Arctium lappa*) extract
 Burdock (*Arctium minus*) root extract
 5 Burnet extract
 Butcherbroom (*Ruscus aculeatus*) extract
 Cabbage rose (*Rosa centifolia*) extract
 Calamus (*Acorus calamus*) extract
 Calendula officinalis extract
 10 Caper (*Capparis spinosa*) extract
 Capsicum frutescens extract, C.f. oleoresin
 Caraway (*Carum carvi*) extract
 Carrageenan (*Chondrus crispus*)
 Carrot (*Daucus carota*) extract
 15 Carrot (*Daucus carota sativa*) oil
 Cassia auriculata extract
 Celandine (*Chelidonium majus*) extract
 Chamomile (*Anthemis nobilis*) extract, oil
 Chaparral (*Larrea mexicana*) extract
 20 Cherry (*Prunus speciosa*) leaf extract
 Cherry bark, C.b. extract
 Chestnut (*Castanea sativa*) extract
 Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
 Chlorella vulgaris extract
 25 Cimicifuga foetida rhizome extract
 Cinchona succiruba extract
 Citroflavonoid, water soluble
 Citrus bioflavonoid complex
 Clary extract
 30 Clove (*Eugenia caryophyllus*) extract
 Clover (*Trifolium pratense*) extract
 _____ officinale rhizome extract, C.o.
 _____ water
 Coffee (*Coffea arabica*) bean extract
 35 _____ oatmeal
 _____ (*Tussilago farfara*) leaf extract
 _____ (*Symphytum officinale*) leaf extract
 _____ extract
 _____ (*Echinacea angustifolia*) extract
 40 _____ officinalis
 _____ olitorius extract
 _____ (*Coriandrum sativum*) extract
 _____ (*Zea mays*) cob powder, silk extract
 _____ poppy (*Papaver rhoeas*) extract
 45 _____ (*Centaurea cyanus*) extract
 _____ (*Agropyron repens*) grass
 _____ monogina extract
 _____ maritimum extract
 Cucumber (*Cucumis sativus*) extract
 50 Cypress (*Cupressus sempervirens*) extract
 Dandelion (*Taraxacum officinale*) extract
 Date (*Phoenix dactylifera*) extract
 Dead Sea Mud, Salts
 Dog rose (*Rosa canina*) hips extract
 Dyer's broom extract
 Eleuthero ginseng (*Acanthopanax senticosus*)
 extract
 Elm (*Ulmus campestris*) extract
 Eucalyptus (*Eucalyptus globulus*) extract
 Eucalyptus globulus oil
 Eucommia ulmoides extract
 Euphrasia officinalis extract
 Evening primrose (*Oenothera biennis*) extract, oil
 Everlasting (*Helichrysum arenarium*) extract
 Fennel (*Foeniculum vulgare*) extract
 Fenugreek extract
 Fermented rice (*Oryza sativa*) extract
 Fern (*Dryopteris filix-Mas*) extract
 Fig (*Ficus carica*) extract
 Fir needle extract
 Fumitory (*Fumaria officinalis*) extract
 Gardenia florida extract
 Garlic (*Allium sativum*) extract
 Gelidium cartilagineum
 Gentian (*Gentiana lutea*) extract
 Geranium maculatum extract
 Ginger root extract
 Ginkgo biloba extract
 Ginseng (*Panax ginseng*) extract
 Glycyrrhetic acid
 Glycyrrhizic acid
 Glycyrrhizin ammoniated
 Golden seal (*Hydrastis canadensis*) root extract
 Goldthread (*Coptis japonica*) extract
 Gotu kola extract
 Grape (*Vitis vinifera*) distillate, extract
 Grape (*Vitis vinifera*) leaf, seed extract
 Grape skin extract
 Grapefruit (*Citrus grandis*) peel extract
 Green bean (*Phaseolus lunatus*) extract
 Ground Ivy (*Glechoma hederacea*) extract
 Guarana (*Paullinia cupana*) extract
 Harpagophytum procumbens extract
 Hay flower extract
 Hazel (*Corylus aveilana*) nut extract
 Henna (*Lawsonia inermis*) extract
 Hesperidin, H, methyl chalcone
 Hibiscus sabdariffa extract
 Hibiscus syriacus extract
 High beta-glucan barley flour
 Honeysuckle (*Lonicera caprifolium*) extract
 Honeysuckle (*Lonicera japonica*) leaf extract
 Hops (*Humulus lupulus*) extract
 Horse chestnut (*Aesculia hippocastanum*) extract
 Horseradish (*Cochlearia armoracia*) extract
 Horsetail extract

- Houttuynia cordata extract
 Hyacinth (*Hyacinthus orientalis*) extract
 Hydrocotyl (*Centella asiatica*) extract
 Hydrolyzed oat protein, soy flour
 5 Hypericum perforatum extract
 Hyssop (*Hyssopus officinalis*) extract
 Indian cress (*Tropaeolum majus*) extract
 Isodonis Japonicus extract
 Ivy extract
 10 Japanese angelica (*Angelica acutiloba*) extract, water
 Japanese hawthorn (*Crataegus cuneata*) extract
 Jasmine (*Jasminum officinale*) extract
 Job's tears (*Coix lacryma-jobi*) extract
 15 Jojoba (*Buxus chinensis*) seed powder
 Juniperus communis extract
 Kelp (*Macrocystis pyrifera*) extract
 Kiwi (*Actinidia chinensis*) fruit extract, seed oil
 Kola (*Cola acuminata*) extract
 20 Krameria triandra extract
 Lady's mantle (*Alchemilla vulgaris*) extract
 Lady's Thistle (*Silybum marianum*) extract
 Laurel (*Laurus nobilis*) extract
 Lavender (*Lavandula angustifolia*) extract, water
 25 Lemon (*Citrus medica limonum*) extract, juice extract, peel extract
 Lemon bioflavonoids extract
 Lemongrass (*Cymbopogon schoenanthus*) extract
 Leopard flower (*Belamcanda chinensis*) root extract
 30 Lettuce (*Lactuca scariola sativa*) extract
 Licorice (*Glycyrrhiza glabra*) extract
 Lilac (*Syringa vulgaris*) extract
 Linden (*Tilia argentea*) extract
 35 Linden (*Tilia cordata*) extract, water
 Loquat (*Eriobotrya japonica*) leaf extract
 Maidenhair fern extract
 magnolia kobus extract
 Mallow extract
 40 Mandragora officinarum extract
 Mannan
 Marigold
 Marine silts
 Matricaria (*Chamomilla recutita*) extract
 45 Meadowsweet (*Spiraea ulmaria*) extract
 Melon (*Cucumis melo*) extract
 MEA iodine
 Mistletoe (*Viscum album*) extract
 Mugwort (*Artemisia princeps*) extract, water
 50 Mulberry (*Morus alba*) root extract
 Mushroom extract
 Myrrh (*Commiphora myrrha*) extract
 Nasturtium extract
 Neroli extract
 nettle (*Urtica dioica*) extract
 Oak (*Quercus*) bark extract
 Oak root extract
 Oat (*Avena sativa*) bran, bran extract, flour, protein
 Oat flower
 Olive (*Olea europa*) extract, leaf extract
 Onion (*Allium cepa*) extract
 Orange blossom extract
 Orange (*Citrus aurantium dulcis*) flower extract, peel extract
 Pansy (*Viola tricolor*) extract
 Papaya (*Carica papaya*) extract
 Parsley (*Carum petroselinum*) extract
 Passion flower (*Passiflora laurifolia*) fruit extract
 Passionflower (*Passiflora incarnata*) extract
 Pea (*Pisum sativum*) extract
 Peach (*Prunus persica*) extract, leaf extract
 Pelargonium capitatum extract
 Pellitory (*Parietaria officinalis*) extract
 Pennyroyal (*Mentha pulegium*) extract
 Peony (*Paeonia albaflora*) extract
 Peony (*Paeonia obovata*) root extract
 Peppermint (*Mentha piperita*) extract, oil
 Perilla ocymoides extract
 Periwinkle (*Vinca minor*) extract
 PEG-80 jojoba acid/alcohol
 PEG-120 jojoba acid/alcohol
 Pfaffia paniculata extract
 Pheilodendron amurense extract
 Posholipids
 pimento (*Pimenta officinalis*) extract
 Pine (*Pinus sylvestris*) cone, needle extract
 Pineapple (*Ananas sativus*) extract
 Plantain (*Plantago major*) extract
 Pollen extract
 Pongamol
 Poria Cocos extract
 Pueraria lobata extract
 Queen of the meadow extract
 Quillaja saponaria extract
 Quince (*Pyrus cydonia*) seed extract
 Quinoa (*Chenopodium quinoa*) extract
 Raspberry (*Rubus*) extract
 Rauwolfia (*Serpentina*) extract
 Red clover
 Rehmannia chinensis extract
 Restharrow (*Ononis spinosa*) extract
 Rhododendron chrysanthum extract
 Rhodophycea extract
 Rhubarb (*Rheum palmatum*) extract
 Rice (*Oryza sativa*) bran extract

- Rice fatty acid
 Rose (*Rosa multiflora*) extract
 Rosemary (*Rosmarinus officinalis*) extract
 Rubia tinctorum extract
 5 Safflower (*Carthamus tinctorius*) extract
 Sage (*Salvia officinalis*) extract, water
 Sambucus nigra berry extract, extract
 Sandalwood (*Santalum album*) extract
 Sanguinaria canadensis extract
 10 Saponaria officinalis extract
 Sasa veitchii extract
 Saxifraga sarmentosa extract
 Scabiosa arvensis extract
 Scutellaria baicatusensis root extract
 15 Silk extract
 Silver fir (*Abies pectinata*) extract
 Sisal (*Agave rigida*) extract
 Slippery elm extract
 Soapberry (*Sapindus mukuross*) extract
 20 Sophora angustifolia extract
 Sophora flavescens root extract
 Sophora japonica extract
 Soybean (*Glycine soja*) extract
 Soy (*Glycine soja*) germ extract, protein, sterol
 25 Spearmint (*Mentha viridis*) extract, oil
 Spinach (*Spinacia oleracea*) extract
 Spiraea ulmaria extract
 Sunflower (*Helianthus annuus*) seed extract
 Sweet almond (*Prunus amygdalus dulcis*) extract
 30 Sweet chery (*Prunus avium*) extract
 Sweet cicely (*Anthriscus cerefolium*) extract
 Sweet clover (*Melilotus officinalis*) extract
 Sweet violet (*Viola odorata*) extract
 Swertia chirata extract
 35 Tea (*Camillia sinensis*) extract
 Thyme (*Thymus vulgaris*) extract
 Tomato (*Solanum lycopersicum*) extract
 Tormentil (*Potentilla erecta*) extract
 Tuberose (*Polianthes tuberosa*) extract
 40 Turmeric (*Curcuma longa*) extract
 Valerian (*Valeriana officinalis*) extract
 Walnut (*Juglans regia*) extract, leaf extract
 Water Lily (*Nymphaea alba*) root extract
 Watercress (*Nasturtium officinale*) extract
 45 Wheat (*Triticum vulgare*) extract, protein
 Wheat (*Triticum vulgare*) germ extract
 Wheat bran lipids
 White ginger (*Hedychium coronarium*) extract
 White nettle (*Lamium album*) extract
 50 Wild agrimony (*Potentilla anserina*) extract
 Wild cherry (*Prunus serotina*) bark extract
 Wild indigo (*Baptista tinctoria*)
 Wild marjoram (*Origanum vulgare*) extract
 Willow (*Salix alba*) bark extract, extract
 Willow (*Salix alba*) leaf extract
 Witch hazel (*Hamamelis virginiana*) extract
 Yarrow (*Achillea millefolium*) extract
 Yeast (*Saccheromyces cerevisiae*) extract (Faex)
 Yucca vera extract
 Zanthoxylum piperitum extract
 Zedoary (*Curcuma zedoraria*) oil

Buffer
 Ammonium carbonate, A. phoshate
 Calcium hydroxide, C. phosphate
 Citric acid
 Ethanolamine HCl
 Glycine
 Phosphoric acid
 Potassium phosphate
 Potassium sodium tartrate
 Sodium acetate, S. citrate
 Sodium lactate, S. phosphate
 Succinic acid
 Tromethamine

Carrier
 Acrylates copolymer, spherical powder
 Arginine
 Caprylic/capric triglyceride
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/oleic triglyceride
 Cetareth-20
 Coconut (*Cocos nucifera*) oil
 Cyclodextrin
 Dipropylene glycol
 Glyceryl caprylate, G. caprylate/caprte
 Hydrated silica
 Liposomes
 magnesium silicate
 Methyl propanediol
 PEG-8/SMDI copolymer
 Potassium chloride
 PPG-12/SMDI Copolymer
 PPG-51/SMDI Copolymer
 Propylene carbonate, P. glycol
 Serum albumin
 Sodium carboxymethyl beta-glucan
 Sodium chloride
 sodium magnesium silicate
 Tapioca dextrin

Chelators
 beta-Alanine diacetic acid
 Calcium disodium EDTA
 Disodium EDTA, -copper

- EDTA
HEDTA
Malic acid
Monostearyl citrate
5 Pentasodium pentetate
Pentetic acid
Phytic acid
Potassium aspartate
Sodium aspartate
10 Sodium dihydroxyethylglycinate
Sodium hexametaphosphate
Tetrahydroxypropyl ethylenediamine
Tetrasodium EDTA
Tripotassium EDTA
15 Trisodium EDTA, HEDTA
- Cell stimulant**
Aesculus chinensis extract
Artemisia apiacea extract
20 Astrocaryum muru, A. tucuma extract
Bactris gasipaes extract
Borojoa sorbilis extract
Calendula amurensis extract
Chrysanthemum morifolium extract
25 Coccinea indica extract
Comfrey (Symphytum officinale) leaf extract
Condurango extract
Dandelion (Taraxacum officinale) extract
Echitea glauca extract
30 Equisetum arvense extract
Eucalyptus (Eucalyptus globulus) extract
Euphorium fortunei extract
Euterpe precatoria extract
Ficus racemosa extract
35 Glycoproteins
Hierochloe odorata extract
Horse chestnut (Aesculia hippocastanum) extract
Inga edulis extract
Kadsura heteliloca extract
40 Ligustrum lucidum extract
Lysimachia foenum-graecum extract
Mauritia flexosa extract
Maximilliana regia extract
Melaleuca bracteata, M. symphyocarp extract
45 Nelumbium speciosum extract
Ocimum basilicum extract, O. santum extract
Paulownia imperialis extract
Pfaffia spp. extract
Pterocarpus marsupianus extract
50 Rubus thunbergii extract
Selinum spp. extract
Shorea robusta extract
Xanthozylum bungeanum extract

Cleansing

Birch (Betula alba) leaf extract
Lemongrass (Cymbopogon schoenanthus) extract
Oat (Avena sativa) bran extract
Passion glower (Passiflora laurifolia) fruit extract
Witch hazel (Hamamelis virginiana) extract
Yarrow (Achillea millefolium) extract

Conditioner

Acetamide MEA
6-(N-Acetyl amino)-4-oxyhexyltrimonium
chloride
Acrylamidopropyltrimonium chloride/acrylamide
copolymer
Adipic acid/dimethylaminohydroxypropyl
diethylene triamine copolymer
AMP-isostearoyl hydrolyzed wheat protein
Apricot (Prunus armeniaca) kernel oil
Behenalkonium chloride
Behenamidopropyl dihydroxypropyl dimonium
chloride
Benhenamidopropyl ethyldimonium ethosulfate
Benhenamidopropyl PG-dimonium chloride
Behenamidopropyl dimethylamine behenate
Behenamine oxide
Behenoyl PG-trimonium chloride
Behenyl betaine
Benzyltrimonium hydrolyzed collagen
Canolamidopropyl betain
Capramide DEA
Caprylic/capric/lauric triglyceride
Caprylyl pyrrolidone
Cassia auriculata extract
Cetamine oxide
Cetearalkonium chloride
Chitosan PCA
Citric acid
Cocamidopropyl dimethylamine, C.d. lactate,
C.d. propionate
Cocamidopropyl dimethylaminohydroxypropyl
hydrolyzed collagen
Cocamidopropyl dimonium
hydroxypropylhydrolyzed collagen
Cocamidopropyl ethyldimonium ethosulfate
Cocamidopropyl PG-dimonium chloride, C.P.c.
phosphate
Coco-morpholine oxide
Coco/oleamidopropyl betaine
Cocodimonium hydroxypropyl hydrolyzed hair
keratin
Cocodimonium hydroxypropyl hydrolyzed rice
protein
Cocodimonium hydroxypropyl hydrolyzed silk

- | | | |
|----|---|--|
| | Cocodimonium hydroxypropyl hydrolyzed soy protein | Hydroxypropyl guar hydroxypropyltrimonium chloride |
| | Coconut alcohol | Hydroxypropyl-bis- |
| 5 | N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate | isostearyamidopropyltrimonium chloride |
| | Collagen phthalate | Hydroxypropyl bis-stearyldimonium chloride |
| | Dibehenyl/diarachidyl dimonium chloride | Hydroxypropyltrimonium gelatin |
| | Dibehenyldimonium chloride | Hydroxypropyltrimonium hydrolyzed keratin |
| | Dicetyldimonium chloride | H.b. silk |
| 10 | Didecyldimonium chloride | Hydroxypropyltrimonium hydrolyzed wheat protein |
| | Dihydroxyethyl cocamine oxide | Isopropyl hydroxybutyramide dimethicone copolyol |
| | Dihydroxyethyl dihydroxypropyl stearamonium chloride | Isopropyl lanolate |
| | Dihydroxyethyl tallow glycinate | Isostearamidopropyl betaine, I. dimethylamine |
| 15 | Dihydroxyethyl tallowamine oxide | Isostearamidopropyl dimethylamine gluconate |
| | Dilauryl acetyl dimonium chloride | Isostearamidopropyl dimethylamine glycolate |
| | Dilinoeamidopropyl dimethylamine | Isostearamidopropyl dimethylamine lactat |
| | Dimethyl hydrogenated tallowamine | Isostearamidopropyl ethyldimonium ethosulfate |
| | Dimethyl lauramine, D.L. isostearate | Isostearamidopropyl laurylaceto-dimonium chloride |
| 20 | Dimethyl myristamine, soyamine, stearamine | Isostearamidopropyl morpholine, I.m. lactate |
| | Dimethylamidopropylamine dimerate | Isostearamidopropyl morpholine oxide |
| | Disodium hydrogenated cottonseed glyceride sulfosuccinate | Isostearamidopropyl PG-dimonium chloride |
| | Disodium laureth sulfosuccinate | Isostearaminopropylalkonium chloride |
| 25 | Disodium lauroamphodiacetate | Isostearyl hydrolyzed animal protein |
| | Distearyldimonium chloride | Isostearylamidopropyl dihydroxypropyl dimonium chloride |
| | Ethyl ester of hydrolyzed keratin | Lactoglobulin |
| | N-Ethylether-bis-1,4-(N-isostearylamidopropyl)-N,N-dimethyl ammonium chlo | Lauramidopropyl dimethylamine |
| 30 | Glutamic acid | Lauramidopropyl PG-dimonium chloride, I.P.c. phosphate |
| | Glyceryl collagenate | Lauramine oxide |
| | Glycine | Lauroampho PG-glycinate phosphate |
| | Guar hydroxypropyltrimonium chloride | Lauroyl hydrolyzed collagen, L.h. elastin |
| 35 | Henna (Lawsonia inermis) extract | Lauroyl silk amino acids |
| | Hydrogenated tallowamine oxide | Lauryl methyl gluceth-10 hydroxypropyl-dimonium chloride |
| | Hydrogenated tallowtrimonium chloride | Lauryl phosphate, L. pyrrolidone |
| | Hydrolyzed conchiorin protein | Lauryldimonium hydroxypropyl hydrolyzed collagen, keratin, soy protein |
| | Hydrolyzed egg protein | Linoleamidopropyl dimethylamine |
| | Hydrolyzed extensin | Milk amino acids |
| 40 | Hydrolyzed fibronectin | Milk protein (Lactis proteinum) |
| | Hydrolyzed fish protein | Myristalkonium chloride |
| | Hydrolyzed keratin | Myristamidopropyl betaine, M. dimethylamine |
| | Hydrolyzed lactalbumin | Myrtrimonium bromide |
| | Hydrolyzed milk protein | Oat (Avena sativa) protein |
| 45 | Hydrolyzed oats | Oleamide |
| | Hydrolyzed reticulin | Oleamidopropyl betaine, O. dimethylamine |
| | Hydrolyzed soy protein | Oleamidopropyl dimethylamine hydrolyzed collagen |
| | Hydrolyzed sweet almond protein | Oleamidopropylamine oxide |
| 50 | Hydrolyzed wheat protein/PVP copolymer | Oleamine |
| | Hydrolyzed wheat protein polysiloxane polymer | |
| | Hydroxycetyl hydroxyethyl dimonium chloride | |
| | Hydroxyproline | |
| | Hydroxypropyl chitosan | |

	Oleamine oxide	Ricinoleamidopropyl ethyldimonium ethosulfate
	Oleoyl sarcosine	Ricinoleamidopropyltrimonium chloride
	Oleyl betaine	Ricinoleamidopropyltrimonium ethosulfate
	Oleyl dimethylamidopropyl ethonium ethosulfate	Silicone quaternium-3, -4
5	Palmitamidopropyl betaine	Silk amino acids
	Palmitamidopropyl dimethylamine	Sodium/TEA-lauroyl collagen amino acids
	Palmitamine, P. oxide	Sodium/TEA-lauroyl hydrolyzed keratin
	Panthenyl hydroxypropyl steardimonium chloride	Sodium/TEA-lauroyl keratin amino acids
	PEG-2 milk solids	Sodium citrate
10	PEG-2 oleammonium chloride	Sodium cocoyl hydrolyzed soy protein
	PEG-3 lauramine oxide	Sodium hydrogenated tallow dimethyl glycinate
	PEG-5 stearyl ammonium lactate	Sodium lauroyl collagen, keratin amino acids
	PEG-15 cocomonium chloride	Sodium lauroyl wheat amino acids
	PEG-15 cocopolyamine	Sodium stearoamphoacetate
15	PEG-15 tallowmonium chloride	Soluble keratin, wheat protein
	PEG-27	Soyamide DEA
	PEG-40	Soyamidopropyl benzyldimonium chloride
	PEG-85 lanolin	Soyamidopropyl betaine, S. dimethylamine
	PEG-7000	Soyamidopropyl ethyldimonium ethosulfate
20	Polydimethicone copolyol	Soyethyl morpholinium ethosulfate
	Polymethacrylamidopropyltrimonium chloride	Soyethyldimonium ethosulfate
	Polyoxyethylene dihydroxypropyl linoleaminium chloride	Stearamide MEA
	Polyquaternium-2, -5, -6, -11, -16	Stearamidoethyl diethylamine, ethanolamine
25	Polyquaternium-17, -18, -24, -29, -44	Stearamidopropyl benzyl dimonium chloride
	Potassium dimethicone copolyol panthenyl phosphate	Searamidopropyl cetearyl dimonium tosylate
	Potassium lauroyl collagen amino acids	Stearamidopropyl dimethylamine stearate
	Potassium lauroyl hydrolyzed soy protein	Stearamidopropyl ethyldimonium ethosulfate
30	Potassium lauroyl wheat amino acids	Stearamidopropyl morpholine lactate
	Potassium stearyl hydrolyzed collagen	Stearamidopropyl PG-dimonium chloride
	PPG-5 lanolin alcohol ether	phosphate
	PPG-9 diethylmonium chloride	Stearmine oxide
	PPG-20 lanolin alcohol ether	Steardimonium hydroxypropyl hydrolyzed collagen, keratin
35	Proline	Steardimonium panthenol
	Propylene glycol stearate	Stearoyl amidoethyl diethylamine
	PVP/dimethiconylacrylate/polycarbamyl/polyglycol ester	Steartrimonium bromide
40	PVP/dimethylaminoethylmethacrylate copolymer	Stearyl dimethicone
	PVP/dimethylaminoethylmethacrylate/polycarbamyl/polyglycol ester	Tallowamidopropyl dimethylamine
	PVP/hydrolyzed wheat protein copolymer	Tetramethyl trihydroxy hexadecane
	Quaternium-22, -26, -33, -61, -62, -70, -80	TEA-cocoyl hydrolyzed collagen
45	Quaternium-76 hydrolyzed collagen	Trachea hydrolysate
	Rapeseedamidopropyl benzyldimonium chloride	Tricetylmonium chloride
	Rapeseedamidopropyl epoxypopyl dimonium chloride	Tridecyl salicylate
	Rapeseedamidopropyl ethyldimonium ethosulfate	Triethonium hydrolyzed collagen ethosulfate
50	Rice peptide	Wheat germamidopropalkonium chloride
	Ricinoleamidopropyl-dimonium ethosulfate	Wheat germamidopropyl dimethylamine lactate
	Ricinoleamidopropyl betaine	Wheat germamidopropyl ethyldimonium ethosulfate
	Ricinoleamidopropyl dimethylamine lactate	Wheat peptide
		Yeast powder, deproteinated
		<u>Coupling agent</u>
		Acetyl monoethanolamine

	Butyloctanol	Decyl glucoside
	Myreth-3	Decyltetradeceth-25
	Oleyl alcohol	DEA lauryl sulfate
5	PPG-10 butanediol	Diamyl sodium sulfosuccinate
	PPG-10 cetyl ether	Dicyclohexyl sodium sulfosuccinate
	PPG-10 oleyl ether	Diisobutyl sodium sulfosuccinate
	PPG-15 stearyl ether	Disodium caproamphodiacetate
	PPG-22 butyl ether	Disodium caproamphodipropionate
10	PPG-23 oleyl ether	Disodium capryloamphodiacetate
	PPG-50 oleyl ether	Disodium capryloamphodipropionate
	Trideceth-7 carboxylic acid	Disodium cetearyl sulfosuccinate
	<u>Denaturant</u>	Disodium cocamido MEA-sulfosuccinate
	Brucine sulfate	Disodium cocamido MIPA-sulfosuccinate
15	Denatonium benzoate, saccharide	Disodium cocoamphodipropionate
	Nicotine sulfate	Disodium deceth-6 sulfosuccinate
	Sucrose octaacetate	Disodium isodecyl sulfosuccinate
	Thymol	Disodium lauramido MEA-sulfosuccinate
20	<u>Dental powder</u>	Disodium lauramido PEG-2 sulfosuccinate
	Dicalcium phosphate	Disodium laureth sulfosuccinate
	Silica	Disodium lauroamphodiacetate
	Sodium monofluorophosphate	Disodium lauroamphodipropionate
	Stannous fluoride	Disodium lauryl sulfosuccinate
25	<u>Deodorant</u>	Disodium myristamido MEA-sulfosuccinate
	Abietic acid	Disodium nonoxynol-10 sulfosuccinate
	Azadirachta indica extract	Disodium oleamido PEG-2 sulfosuccinate
	Chlorophyllin-copper complex	Disodium PEG-4 cocoamido MIPA-sulfosuccinate
30	Eugenia jambolana extract	Disodium ricinoleamido MEA-sulfosuccinate
	Farnesol	Disodium tallowiminodipropionate
	Fermented vegetable	Dodecylbenzene sulfonic acid
	Mauritia flexosa extract	Dodoxynol-6, -9
35	Salvia multiorrhiza extract	Isopropylamine dodecylbenzenesulfonate
	Sodium aluminum chlorohydroxy lactate	Isostearamidopropyl betaine
	Spondias amara extract	Isosteareth-6 carboxylic acid
	Triethyl citrate	Isostearoamphopropionate
	Zinc phenol sulfonate, Z. ricinoleate	Isostearyl hydroxyethyl imidazoline
40	<u>Depilatory</u>	Lauramidopropylamine oxide
	Barium sulfide	Laureth-11
	Beeswax, oxidized	Lauroampho PG-glycinate phosphate
	Calcium thioglycolate	Lauryl glucoside, L. phosphate
	L-cysteine HCL	Magnesium laureth sulfate, M. lauryl sulfate
45	Potassium thioglycolate	Magnesium PEG-3 cocamide sulfate
	Sodium thioglycolate	MEA-dodecylbenzenesulfonate
	Thioglycerin	MEA-laureth sulfate
	<u>Detergent</u>	MEA-lauryl sulfate
50	Ammonium laureth sulfate	MIPA-lauryl sulfate
	Ammonium lauryl sulfate	Myristamine oxide
	Capramide DEA	Myristic acid
	Cocamidopropyl dimethylamine lactate	Nonoxynol-10
		Oleoamphohydroxypropyl sulfonate
		Oleth-12, -15
		Oleyl betaine
		Palmitamidopropyl betaine

	PEG-10 glyceryl stearate	Shikonin
	PEG-15 glyceryl stearate	Sodium capryloamphoacetate
	PEG-25 glyceryl isostearate	Tea tree (<i>Melaleuca alternifolia</i>) oil
	Potassium cocoyl hydrolyzed collagen	p-Tertarylphenol
5	Sodium caproamphoacetate	
	Sodium cocoamphoacetate	Dispersant
	Sodium cocoamphopropionate	Alkylated polyvinylpyrrolidone
	Sodium cocomonoglyceride sulfate	C20-40, C30-50, C40-60 alcohols
	Sodium cocoyl hydrolyzed soy protein	Castor (<i>Ricinus communis</i>) oil
10	Sodium cocoyl isethionate	Ceteareth-20
	Sodium C12-15 pareth-25 sulfate	Cetyl PPG-2 isodeceth-7 carboxylate
	Sodium C14-16 olefin sulfonate	Cholesteryl/behanyl/octyldodecyl lauroyl glutamate
	Sodium C14-17 alkyl sec sulfonate	Decaglycerol monodioleate
	Sodium deceth sulfate	Diisocetyl dodecanedioate
15	Sodium decyl diphenyl ether sulfonate	Diisostearyl adipate
	Sodium dodecylbenzenesulfonate	Dimethicone copolyol methyl ether
	Sodium dodecyldiphenyl ether sulfonate	Dioctyldodecyl dimer dilinoleate
	Sodium iodate	Dioctyldodecyl dodecanedioate
	Sodium laureth-2 sulfate	Ethyl hydroxymethyl oleyl oxazoline
20	Sodium laureth-3 sulfate	Glyceryl caprylate, G. caprylate/caprates
	Sodium laureth-7 sulfate	Glyceryl diisostearate
	Sodium laureth-12 sulfate	Hydrogenated castor oil, H. lecithin
	Sodium laureth-13-carboxylate	Hydrogenated tallow glycerides
	Sodium laureth sulfate	Isobutylene/MA copolymer
25	Sodium lauriminodipropionate	Isocetyl alcohol
	Sodium lauroamphopropionate	Isopropyl C12-15-pareth-9-carboxylate
	Sodium lauroyl methyl alaninate	Isostearyl neopentanoate
	Sodium lauryl phosphate, S.I. sulfate	Lanolin acid
	Sodium lauryl sulfoacetate	Laureth-4, -6, -16
30	Sodium methyl oleoyl taurate	Melanin
	Sodium methyl cocoyl taurate	Nonoxynol-2, -18, -20, -30, -40
	Sodium methyl lauroyl taurate	Octoxynol-5, -10
	Sodium methyl naphthalenesulfonate	Octoxynol 16, 30, 40, 70
	Sodium myreth sulfate	Octyldodeceth-5
35	Sodium myristyl sulfate	Octyldodecyl/dimethicone copolyol citrate
	Sodium octyl sulfate, oleyl sulfate	Oleth-40
	Sodium POE alkyl ether acetate	Oleyl alcohol
	Sodium trideceth-7 carboxylate	PEG-5 castor oil, glyceryl sesquioleate
	Sodium trideceth sulfate	PEG-6 beeswax
40	Sodium tridecyl sulfate	PEG-8/SMDI copolymer
	Steareth-11, -30	PEG-9 castor oil, oleate, stearate
	TEA-dodecylbenzenesulfonate	PEG-10 dioleate, stearamine
	TEA-laureth sulfate	PEG-12 beeswax
	TEA-lauryl sulfate	PEG-12 glyceryl dioleate, laurate
45	TEA-palm kernel sarcosinate	PEG-15 castor oil
	TEA-PEG-3 cocamide sulfate	PEG-20 almond glycerides
	Undecylenamidopropyl betaine	PEG-20 glyceryl isostearate
	Disinfectant	PEG-20 sorbitan triisostearate
50	Benzalkonium chloride	PEG-25 castor oil
	Chlorophene	PEG-30 dipolyhydroxystearate
	Didecyldimonium chloride	PEG-40 hydrogenated castor oil PCA isostearate
	Myristalkonium saccharinate	PEG-60 shea butter glycerides

- Poloxamer 101, 122, 181, 182, 184
 Polyglyceryl-2 sesquiisostearate
 Polyglyceryl-3 diisostearate, oleat
 Polyglyceryl-5 distearate
 5 Polyglyceryl-6 mixed fatty acids
 Polyglyceryl-10 diisostearate, distearate
 Polyglyceryl-10 decaoleate
 Polyhydroxystearic acid
 Polysorbate 40, 80
 10 Potassium polyacrylate
 PPG-3 PEG-6 oleyl ether
 PPG-9 diethylmonium phosphate
 PPG-12/SMDI Copolymer
 PPG-15 stearyl ether
 15 PPG-25, PPG-40 diethylmonium chloride
 PPG-51/SMDI Copolymer
 PVP/eicosene copolymer
 PVP/hexadecene copolymer
 Rapeseed oil, ethoxylated high erucic acid
 20 Ricinoleyl alcohol
 Sodium ceteth-13-carboxylate
 Sodium lignosulfonate, S. polymethacrylate
 Sodium polynaphthalenesulfonate
 Sorbitan oleate
 25 Steareth-10
 Tricontanyl PVP
 Triisostearin PEG-6 esters
 Trioctylododecyl citrate
 30 **Emollient**
 Acetylated glycol stearate
 Acetylated hydrogenated lanolin
 Acetylated hydrogenated lard glyceride
 Acetylated hydrogenated vegetable glyceride
 35 Acetylated lanolin, A.I. alcohol
 Acetylated lard glyceride
 Acetylated monoglycerides
 Acetylated palm kernel glycerides
 Aleurites moluccana ethyl ester
 40 Allantoin
 Aluminum/magnesium hydroxide stearate
 AMP-isostearoyl hydrolyzed soy protein
 Apricot (*Prunus armeniaca*) karnel oil
 Arachidyl behenate
 45 Argania spinosa oil
 Avocado (*Persea gratissima*) oil, unsaponifiables
 Avocado oil ethyl ester
 Babassu (*Orbignya oleifera*) oil
 Batyl isostearate, B. stearate
 50 Behenamidopropyl dihydroxypropyl dimonium
 chloride
 Behenoxy dimethicone
 Behenyl alcohol, B. behenate
 Behenyl erucate, B. isostearate
 Benzyl laurate
 Bladderwrack (*Fucus vesiculosus*) extract
 Borage (*Borago officinalis*) seed oil
 Borageamidopropyl phosphatidyl PG-dimonium
 chloride
 Brain extract
 Brazil nut (*Berthollettia excelsa*) oil
 Butyl myristate, oleate, stearate
 Butyloctanol
 Butyloctyl oleate
 C12-13, C12-16, C14-15 alcohols
 C12-15 alcohols octanoate
 C12-15 alkyl benzoate
 dl-C12-15 alkyl fumarate
 C12-15 alkyl lactate
 Camellia kissi oil
 Tea (*Camellia sinensis*) oil
 C10-30 cholesterol/lanostearol esters
 Canola oil
 Caprylic/capric triglyceride
 Caprylic/capric triglyceride PEG-4 esters
 Caprylic/capric/lauric triglyceride
 Caprylic/capric/linoleic triglyceride
 Caprylic/capric/oleic triglycerides
 Caprylic/capric/stearic triglyceride
 Caprylic/capric/succinic triglyceride
 Capsicum frutescens oleoresin
 Carrot (*Daucus carota sativa*) oil
 Cashew (*Anacardium occidentale*) nut oil
 Castor (*Ricinus communis*) oil
 Cetearyl behenate, C. candelillate
 Cetearyl isononanoate, C. octanoate
 Cetearyl palmitate, C. stearate
 Ceteth-10
 Cetostearyl stearate
 Cetyl C12-15 pareth-9 carboxylate
 Cetyl acetate, C. alcohol
 Cetyl esters, C. lactate
 Cetyl myristate, C. octanoate
 Cetyl oleate, C. palmitate
 Cetyl PPG-2 isodeceth-7 carboxylate
 Cetyl ricinoleate, C. stearate
 Cetyl stearyl octanoate
 Chia (*Salvia hispanica*) oil
 Cholesteric esters
 Cholesterol
 Cholesteryl/behenyl/octyldodecyl lauroyl
 glutamate
 Cholesteryl hydroxystearate
 Cholesteryl stearate
 Choeth-24
 C18-70 Isoparaffin

	C10-18, C12-18 triglycerides	Diocylcyclohexane
	C12-15 linear alcohols 2-ethylhexanoate	Diocylododecyl dimer dilinoleate
	Cocamidopropyl PG-dimonium chloride	Diocylododecyl dodecanedioate
	Cocoa (Theobroma cacao) butter	Diocyl malate, D. sebacate, succinate
5	Coco-caprylate/caprates	Dipentaerythritol fatty acid ester
	Coco-rape seed oil	Dipentaerythrityl hexacaprylate/hexacaprate
	Coconut (Cocos nucifera) oil	Dipentaerythrityl hexahydroxystearate/isostearate
	Cocoyl hydrolyzed soy protein	Distearyl dimethylamine dilinoleate
	Collagen hthalate	Ditridecyl adipate
10	Colloidal oatmeal	Dog rose (Rosa canina) hips oil
	Comfrey (Symphytum officinale) leaf extract	Egg (Ovum) yolk extract
	Corn (Zea mays) oil	Emu (Dromiceius) oil
	Corn poppy (Papaver rhoeas) extract	Erucyl erucate
	Cottonseed (Gossypium) oil	Ethyl avocadate
15	Cuttlefish extract	Ethylhexyl isopalmitate
	Cyclomethicone	2-Ethylhexyl isostearate
	Deceth-4 phosphate	Ethyl linoleate, E. myristate
	Decyl oleate	Ethyl myristate, E. myristate
	Decyltetradecanol	Ethyl oleate, E. olivate
20	Dialkyldimethylpolysiloxane	Evening primrose (Oenothera biennis) extract, oil
	Dibutyl sebacate	Glycereth-4,5-lactate
	Dicapryl adipate	Glycereth-5 lactate
	Dicaprylyl ether, D. maleate	Glycereth-7 benzoate
	Diethylene glycol diisononanoate	Glycereth-7 diisononanoate
25	Diethylene glycol dioctanoate	Glycereth-7 triacetate
	bis-Diglyceryl/caprylate/caprates/isostearate/ hydroxystearate/adipate	Glycereth-7 trioctanoate
	bis-Diglyceryl/caprylate/caprates/isostearate/ stearate/hydroxystearate/adipate	Glycereth-12, -26
30	Dihydroabietyl behenate	Glycerol tricaprylate/caprates
	Dihydroxyethyl tallowamine oleate	Glyceryl adipate, G. dioleate
	Diisobutyl adipate	Glyceryl isostearate, G. lanolate
	Diisocetyl adipate, dodecanedioate	Glyceryl linoleate, G. monopyroglutamate
	Diisodecyl adipate	Glyceryl myristate, G. oleat
35	Diisopropyl adipate, dimer dilinoleate	Glyceryl ricinoleate
	Diisopropyl sebacate	Glyceryl triacetyl hydroxystearate
	Diisostearyl trimethylolpropane siloxy silicate	Glyceryl triacetyl ricinoleate
	Diisostearyl adipate	Glycosaminoglycans
	Diisostearyl dimer dilinoleate	Glycosphingolipids
40	Diisostearyl fumarate, D. malate	Gold of Pleasure oil
	Dilinoleic acid	Grape (Vitis vinifera) seed oil
	Dimethicone	Hazel (Corylus avellana) nut oil
	Dimethicone copolyol	Helianthus annuus ethyl ester
	Dimethicone copolyol acetate, D.c. almondate	Hexadecyl isopalmitate
45	Dimethicone copolyol isostearate, D.c. lactate	Hexamethyldisiloxane
	Dimethicone copolyol methyl ether	hexyl laurate
	Dimethicone copolyol phthalate	hexyldecanol
	Dimethicone propylethylenediamine behenate	Hexyldecanol stearate
50	Dimethiconol stearate	honey extract
	Dimethyl lauramine oleate	Hybrid safflower (Carthamus tinctorius) oil
	Diocyl adipate	Hybrid sunflower (Helianthus annuus) oil
	Diocyl dimer dilinoleate	Hydrogenated C6-14 olefin polymers
		Hydrogenated castor oil
		Hydrogenated castor oil laurate
		hydrogenated coconut oil

	Hydrogenated cottonseed oil	Isostearyl diglyceryl succinate
	Hydrogenated C12-18 triglycerides	Isostearyl erucate, I. erucyl erucate
	Hydrogenated lanolin	Isostearyl isostearate, I. lactate
	Hydrogenated lanolin, distilled	Isostearyl malate, I. myristate
5	Hydrogenated lecithin	Isostearyl neopentanoate, palmitate
	Hydrogenated milk lipids	Isostearyl stearoyl stearate
	Hydrogenated mink oil	Isostearylamidopropyl dihydroxypropyl dimonium chloride
	Hydrogenated palm kernel glycerides	Isotridecyl isononanoate
	Hydrogenated palm oil	Isotridecyl myristate
10	Hydrogenated polyisobutene	Jojoba (<i>Buxus chinensis</i>) oil
	Hydrogenated soybean oil	Jojoba butter, J. esters
	Hydrogenated starch hydrolysate	Jojoba oil, synthetic
	Hydrogenated tallow glyceride	Kukui (<i>Aleurites molaccana</i>) nut oil
	Hydrogenated tallow glyceride lactate	Lactamide DGA
15	Hydrogenated turtle oil	Laneth-10 acetate
	Hydrogenated vegetable glycerides	Lanolin, L. acid
	Hydrogenated vegetable oil	Lanolin alcohol, L. oil
	Hydrolyzed collagen	Lanolin, ultra anhydrous
	Hydrolyzed conchiorin protein	Lanolin wax
20	Hydrolyzed keratin	Lanostearol
	Hydrolyzed mushroom (<i>Tricholoma matsutake</i>) extract	Lard glyceride
	Hydrolyzed oat protein	Laureth-2, -3
	Hydroxylated lanolin	Laureth-2 acetate, L. benzoate
25	Hydrolylated milk glycerides	Laureth-2-octanoate
	Hydroxystearic acid	Lauric/palmitic/oleic triglyceride
	butter	Lauryl behenate, L. lactate
	Isobutyl palmitate, I. stearate	Lauryl phosphae
	Isocetyl behenate, I. octanoate	Lauryldimethylamine isostearate
30	Isocetyl palmitate, I. salicylate	Lesquereila fendleri oil
	Isocetyl stearate	Linoleic acid
	Isodeceth-2 cocoate	Macadamia ternifolia nut oil
	Isodecyl citrate, I. cocoate	Maleated soybean oil
	Isodecyl isononanoate, I. laurate	Mango (<i>Magnifera indica</i>) oil, seed oil
35	Isodecyl neopentanoate	Mango kernel oil
	Isodecyl octanoate, I. oleate	Meadowfoam (<i>Limnanthes alba</i>) seed oil
	Isodecyl stearate	Menhaden (<i>Brevoortia tyrannus</i>) oil
	Isododecane	Methyl acetyl ricinoleate
	Isoeicosane	Methyl gluceth-20
40	Isohexadecane	Methyl gluceth-20 benzoate, M.g. distearate
	isononyl isononanoate	Methyl hydroxystearate, M. ricinoleate
	Isopentyl diol	Microcrystalline wax
	Isopropyl avocadate	Mineral oil (<i>Paraffinum liquidum</i>)
	Isopropyl C12-15-pareth-9-carboxylate	Mink oil
45	Isoproyl isostearate	Musk rose (<i>Rosa moschata</i>) oil
	Isopropyl lanolate, I. linoleate	Myreth-3
	Isopropyl myristate, I. palmitate	Myreth-3 caprate, M. laurate
	Isopropyl PPG-2-isodeceth-7 carboxylate	Myreth-3 myristate, M. octanoate
	Isopropyl sterate	Myristyl alcohol, M. lactate
50	Isosorbide laurate	Myristyl myristate, M. octanoate
	Isostearic acid	Myristyl propionate, M. stearate
	Isostearyl alcohol	Neatsfoot oil
	Isostearyl behenate, I. benzoate	Neem (<i>Melia azadirachta</i>) seed oil

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|----|--|--|
| | Neopentyl glycol dicaprate | PEG-15 cocamine oleate/phosphate |
| | Neopentyl glycol dicaprate/dicaprylate | PEG-18 |
| | Neopentyl glycol diisooctanoate | PEG-20 |
| | Neopentyl glycol dioctanoate | PEG-20 hydrogenated castor oil isostearate |
| 5 | Oat (<i>Avena sativa</i>) bran extract, extract, flour | PEG-20 hydrogenated castor oil triisostearate |
| | Octacosanyl stearate | PEG-20 hydrogenated lanolin |
| | Octyl cocoate | PEG-24 hydrogenated lanolin |
| | Octyl hydroxystearate, O. isononanoate | PEG-25 PABA, P. propylene glycol stearate |
| | Octyl neopentanoate, O. octanoate | PEG-40 glyceryl laurate |
| 10 | Octyl oleate, O. palmitate | PEG-40 hydrogenated castor oil isostearate |
| | Octyl pelargonate, O. stearate | PEG-40 hydrogenated castor oil laurate |
| | Octyldecanol | PEG-40 hydrogenated castor oil triisostearate |
| | Octyldodecanol | PEG-40 jojoba oil |
| | Octyldodecyl behenate, O. benzoate | PEG-50 hydrogenated castor oil laurate |
| 15 | Octyldodecyl erucate, O. myristate | PEG-50 hydrogenated castor oil triisostearate |
| | Octyldodecyl oleate, O. ricinoleate | PEG-60 shea butter glycerides |
| | Octyldodecyl stearate | PEG-70 mango glycerides |
| | bis-Octyldodecyl stearyl dimer dilinoleate | PEG-75 |
| | Octyldodecyl stearyl stearate | PEG-75 lanolin, P. shea butter glycerides |
| 20 | Oleamine oxide | PEG-75 shorea butter glycerides |
| | Oleic/palmitoleic/linoleic glycerides | PEG-150 |
| | Oleic alcohol | PEG/PPG-17/6 copolymer |
| | Oleostearine | Pentaerythrityl dioleate |
| | Oleyl alcohol, O. erucate, O. oleate | Pentaerythrityl |
| 25 | Olive (<i>Olea europaea</i>) oil | isostearate/caprate/caprylate/adipate |
| | Orange (<i>Citrus aurantium dulcis</i>) peel wax | Pentaerythrityl stearate |
| | Orange roughy (<i>Hoplostethus atlanticus</i>) oil | Pentaerythrityl stearate/caprate/caprylate/adipate |
| | Palm (<i>Elaeis guineensis</i>) oil | Pentaerythrityl tetracaprylate/tetracaprate |
| | Palm kernel glycerides | Pentaerythrityl tetraisononanoate, P. |
| 30 | Palmitic acid | tetraisostearate |
| | Panthenyl triacetate | Pentaerythrityl tetralaurate, P. tetraoctanoate |
| | Partially hydrogenated canola oil | Pentaerythrityl tetraoleate, P. tetrapelargonate |
| | Partially hydrogenated soybean oil | Pentaerythrityl tetrastearate |
| | Peach (<i>Prunus persica</i>) extract | Perfluorodecalin |
| 35 | Peanut (<i>Arachis hypogaea</i>) oil | Perfluoropolymethylisopropyl ether |
| | PEG-2 diisononanoate, P. dioctanoate | Petrolatum |
| | PEG-2 milk solids | Phenethyl dimethicone |
| | PEG-4 | Phenyl dimethicone, P. methicone, P. |
| | PEG-4 diheptanoate, P. dilaurate | trimethicone |
| 40 | PEG-5 C8-12 alcohols citrate | Phytantriol |
| | PEG-5 C14-18 alcohols citrate | Pistachio (<i>Pistacia vera</i>) nut oil |
| | PEG-5 hydrogenated castor oil | Placental enzymes |
| | PEG-5 hydrogenated castor oil triisostearate | Pollen extract |
| | PEG-6 | Poloxamer 105 benzoate |
| 45 | PEG-6 capric/caprylic glycerides | Poloxamer 182 dibenzoate |
| | PEG-7 glyceryl cocoate | Polybutene |
| | PEG-8 | Polydecene |
| | PEG-8 dilaurate, P. dioleate | Polydimethicone copolyol |
| | PEG-8/SMDI copolymer | Polyethylene glycol |
| 50 | PEG-9 stearyl stearate | Polyglyceryl-2 diisostearate, P. tetraisostearate |
| | PEG-10 stearyl stearate | Polyglyceryl-2 triisostearate |
| | PEG-12 | Polyglyceryl-3 diisostearate, P. oleate |
| | PEG-12 dioleate, P. palm kernel glycerides | Polyglyceryl-3 stearate |

	Polyglyceryl-6 dioleate	PPG-51/SMDI Copolymer
	Polyglyceryl-10 decaoleate, P. decaurate	PPG-53 butyl ether
	Polyglyceryl-10 tetraoleate	Propylene glycol ceteth-3 acetate
	Polyisobutene	Propylene glycol dicaprylate
5	Polyisobutene/isohexapentacontahexane	Propylene glycol dicaprylate/dicaprate
	Polyisobutene/isooctabexacontane	Propylene glycol diisostearate, P.g. dioctanoate
	Polyisobutene/isopentacontaoctane	Propylene glycol dipelargonate
	Polyisoprene	Propylene glycol isoceteth-3-acetate
	Polyoxyethylene polyoxypropylene glycol	Propylene glycol isostearate, P.g. laurate
10	Polyquaternium-2	Propylene glycol myristate
	Polysiloxane polyalkylene copolymer	Propylene glycol myristyl ether acetate
	Polysorbate 40	Propylene glycol stearate, SE
	Potassium dimethicone copolyol phosphate	Pumpkin (Cucurbita pepo) seed oil
	PPG-2-buteth-3	Quinoa (Chenopodium quinoa) oil
15	PPG-2 lanolin alcohol ether	Rapeseed (Brassica campestris) oil
	PPG-2 myristyl ether propionate	Rice (Oryza sativa bran oil, bran wax
	PPG-3 hydrogenated castor oil	Rice fatty acid
	PPG-3 myristyl ether	Safflower (Carthamus tinctorius) oil
	PPG-5-buteth-7	Salmon (Salmo) egg extract
20	PPG-5-laureth-5	Sesame (Sesamum indicum) oil
	PPG-5 butyl ether	Shark liver oil
	PPG-5 lanolin wax	Shea butter (Butyrospermum parkii)
	PPG-5 pentaerythrityl ether	Shea butter (Butyrospermum parkii) extract
	PPG-7-buteth-10	Shea butter, ethoxylate
25	PPG-8/SMDI copolymer	Shorea stenoptera butter
	PPG-9	Silybum marianum ethyl ester
	PPG-9-buteth-12	Sitostearyl acetate
	PPG-9 butyl ether	Skin lipids
30	PPG-10 butanediol, P. cetyl ether	Slippery elm extract
	PPG-10 methyl glucose ether	Sodium C8-16 isoalkylsuccinyl lactoglobulin
	PPG-10 oleyl ether	sulfonate
	PPG-11 stearyl ether	Sodium carboxymethyl beta-glucan
	PPG-12-buteth-16	Sodium ceteth-13-carboxylate
35	PPG-12-PEG-50 lanolin	Sodium dimethicone copolyol acetyl
	PPG-12-PEG-65 lanolin oil	methylaurate
	PPG-12/SMDI Copolymer	Sodium glyceryl oleate phosphate
	PPG-14 butyl ether	Sodium hyaluronate, S. polymethacrylate
	PPG-15 butyl ether, P. stearyl ether	Sorbeth-20
40	PPG-15 stearyl ether benzoate	Sorbitan isostearate, S. palmitate
	PPG-16 butyl ether	Sorbitan sesquioleate, S. sesquisteate
	PPG-18 butyl ether	Sorbitan trioleate
	PPG-20	Soybean (Glycine soja) oil
	PPG-20-buteth-30	Spermaceti
45	PPG-20 cetyl ether	Sphingolipids
	PPG-24-glycereth-24	Squalene
	PPG-26	Stearamidopropyl cetearyl dimonium tosylate
	PPG-27 glyceryl ether	Steareth-4 stearate
	PPG-28-buteth-35	Stearic acid, S. hydrazide
50	PPG-30	Stearoxy dimethicone
	PPG-30 cetyl ether	Stearoxymethicone/dimethicone copolymer
	PPG-40 butyl ether	Stearyl behenate, S. benzoate
	PPG-50 cetyl ether, P. oleyl ether	Stearyl dimethicone, S. erucate
		Stearyl heptanoate, S. propionate

	Stearyl stearate	Behenamidopropyl dihydroxypropyl dimonium chloride
	Stearyl stearoyl stearate	Beheneth-5, -10, -20, -30
	Sucrose cocoate	Behenic acid
	Sunflower (<i>Helianthus annuus</i>) seed oil	Behenyl betain
5	Sweet almond (<i>Prunus amygdalus dulcis</i>) oil	Borageamidopropyl phosphatidyl PG-dimonium chloride
	Sweet cherry (<i>Prunus avium</i>) pit oil	Butyloctanol
	Synthetic jojoba oil	C12-20 acid PEG-8 ester
	Synthetic wax	C18-36 acid
	Tallow	Calcium dodecylbenzene sulfonate
10	Tetradecyleicosyl stearate	Calcium protein complex
	Tocopheryl acetate	Calcium stearate
	Tricaprin	Calcium stearoyl lactylate
	Tricaprylin	Capramide DEA
	Tricaprylyl citrate	Caprylic/capric acid
15	Tricholoma matsutake extract	Caprylic/capric glycerides
	Tridecyl behenate, T. cocoate	Castor oil, ethoxylate
	Tridecyl erucate, T. neopentanoate	Cetalkonium chloride
	Tridecyl octanoate, T. stearate	Ceteareth-2 -4 -5 -6
20	Tridecyl stearoyl stearate	Ceteareth-2 phosphate
	Tridecyl trimellitate	Ceteareth-5 phosphate
	Trihexyldecyl citrate	Ceteareth-8 -10 -11 -12
	Triisocetyl citrate	Ceteareth-10 phosphate
	Triisostearin	Ceteareth-15 -17 -20 -25
	Triisostearyl citrate	Ceteareth-27 -29 -30 -34
25	Triisostearyl trilinoleate	Cetearyl alcohol
	Trilaurin	Cetearyl glucoside
	Trilinolein	Ceteth-2 -4 -6 -10 -12 -13
	Trimethylolpropane tricaprilate/tricaprate	Ceteth-16 -20 -25 -30 -33
	Trimethylolpropane tricocoate	Cetethyldimonium bromide
30	Trimethylolpropane trilaurate	Cetrimonium chloride
	Trimyristin	Cetyl dimethicone copolyol
	Trioctanoin	Cetyl phosphate
	Trioctyldodecyl citrate	Cholesterol
	Triolein	Choleth-10 -15 -24
35	Tripalmitin	Cocamide DEA, C. MEA
	Tripropylene glycol citrate	Cocamidopropyl dimethylamine
	Tristearin	Cocamidopropyl PG-dimonium chloride phosphate
	Triundecanoin	Cocamine
	Vegetable oil	Coceth-7 carboxylic acid
40	Walnut (<i>Juglans regia</i>) oil	Coconut acid
	Wheat (<i>Triticum vulgare</i>) germ oil	Copper protein complex
	Emulsifier	Cottonseed glyceride
	Acetylated hydrogenated lard glyceride	C12-13 pareth-3 -4 -9 -23
45	Acetylate hydrogenated vegetable glyceride	C16-18 pareth-3 -5.5 -13 -19
	Acetylated monoglycerides	Cyclodextrin
	Acrylates/C10-C30 alkyl acrylate crosspolymer	Decaglycerol monodiolate
	Acrylates/vinyl isodecanoate crosspolymer	DEA-ceteareth-2-phosphate
	Acrylic acid/acrylonitrogens copolymer	DEA-cetyl phosphate
50	2-Aminobutanol	DEA-cyclocarboxypropyloleate
	Ammonium acrylates/acrylonitrogens copolymer	DEA-oleth-3-phosphate
	Arachidyl alcohol	
	Beeswax	

	DEA-oleth-5-phosphate	Glyceryl undecylenate
	DEA oleth-10 phosphate	Glycol distearate, G. oleate
	DEA-oleth-20-phosphate	Glycol palmitate, G. stearate
	Diceteareth-10 phosphoric acid	Glycol stearate SE
5	Diethanolamine	Glycolamide stearate
	Diethylaminoethyl stearate	Glycosphingolipids
	Diglyceryl stearate malate	Hydrogenated coco-glycerides
	Dihydrocholeth-15 -20 -30	Hydrogenated cottonseed glyceride
	Dihydrogenated tallow phthalic acid amide	Hydrogenated lanolin
10	Dilauryl acetyl dimonium chloride	Hydrogenated lecithin
	Dilinoleamidopropyl dimethylamine dimethicone copolyol phosphate	Hydrogenated palm oil
	Dilinoleic acid	Hydrogenated soy glyceride
	Dimethicone copolyol almondate	Hydrogenated tallow glycerides
15	Dimethicone copolyol isostearate	Hydrogenated tallow glycerides citrate
	Dimethicone copolyol laurate	Hydroxycetyl phosphate
	Dimethicone copolyol methyl ether	Hydroxylated lanolin
	Cimethicone copolyol olivate	Hydroxylated lecithin
	Dimethicone copolyol phthalate	Hydroxyoctacosanyl hydroxystearate
20	Dipalmitoylethyl hydroxyethylmonium methosulfate	Hydroxypropyl-bis-isostearylamidopropyldimonium chloride
	Dipropylene glycol	Isoceteareth-8 stearate
	Disodium hydrogenated cottonseed glyceride sulfosuccinate	Isoceteth-10 stearate
25	Disodium ricinoleamido MEA-sulfosuccinate	Isoceteth-20
	Disodium stearyl sulfosuccinate	Isocetyl alcohol
	Disodium sulfosuccinamide	Isolaureth-6
	Distearyl phthalic acid amide	Isostearamidopropyl dimethylamine gluconate
	N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride	Isostearamidopropyl dimethylamine glycolate
30	Dodecylphenol-ethylene oxide condensate	Isostearamidopropyl laurylacetodimonium chloride
	Egg (Ovum) yolk extract	Isosteareth-2 -3 -10 -12 -20 -22 -50
	Emulsifying wax NF	Isostearth-2-octanoate
	Ethoxylated fatty alcohol	Isostearth-10 stearate
35	N-Ethylether-bis-1,4-(N-isostearylamidopropyl-N,N-dimethyl ammonium chlo	Isostearic acid
	Ethyl hexanediol	isostearyl diglyceryl succinate
	Euglena gracilis polysaccharide	Isostearylamidopropyl dihydroxypropyl dimonium chloride
	Glycereth-26 phosphate	Karaya (Stericulia urens) gum
40	Glyceryl caprylate, G. caprylate/caprate	Laneth-5 -10 -15 -16 -20 -40
	Glyceryl citrate/lactate/linoleate/oleate	Laneth-10 acetate
	Glyceryl cocoate, G. dilaurate	Lanolin
	Glyceryl dilaurate, G. dioleate	Lanolin alcohol
	Glyceryl distearate, G. hydroxystearate	Lanolin, ultra anhydrous
45	Glyceryl isostearate, G. lanolate	Lanolin wax
	Glyceryl laurate, G. linoleate	Lauramide DEA, L. MEA
	Glyceryl mono-di-tri-caprylate	Lauramidopropyl dimethylamine
	Glyceryl myristate, G. oleate	Lauramidopropyl PG-dimonium chloride
	Glyceryl palmitate, G. ricinoleate	Laureth-1 -2 -3 -4 -5
50	Glyceryl ricinoleate SE	Laureth-2-octanoate
	Glyceryl stearate, G. stearate citrate	Laureth-3 phosphate
	Glyceryl stearate lactate	Laureth-4 carboxylic acid
	Glyceryl stearate SE	Laureth-5 carboxylic acid
		Laureth-6 -7 -9 -11 -12
		Laureth-11 carboxylic acid

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|----|--|------------------------------------|
| | Laureth-16 -20 -23 -25 -30 | PEG-3 glyceryl tristearate |
| | Lauryl PCA | PEG-3 lanolate, P. sorbitan oleate |
| | Laurylmethicone copolyol | PEG-3 stearate |
| | Lecithin | PEG-4 dioleate, P. diisostearate |
| 5 | Linoleamidopropyl PG-dimonium chloride phosphate | PEG-4 dilaurate, P. distearate |
| | Lithium stearate | PEG-4 glyceryl distearate |
| | Magnesium sulfate hepta-hydrate | PEG-4 laurate, P. oleate |
| | Maleated soybean oil | PEG-4 stearate |
| 10 | Methoxy PEG-17/dodecyl glycol copolymer | PEG-4 stearyl stearate |
| | Methyl gluceth-20 distearate | PEG-4 tallate |
| | methyl glucose dioleate, M.g. sesquiiisostearate | PEG-5 castor oil, P. cocamine |
| | Methyl glucose sesquisteate | PEG-5 C12-C18 alcohols |
| | MEA-laureth sulfate | PEG-5 glyceryl isostearate |
| 15 | Myreth-3 -4 -7 | PEG-5 glyceryl sesquioleate |
| | Myreth-3 myristate | PEG-5 glyceryl stearate |
| | Myristamidopropyl dimethylamine | PEG-5 glyceryl triisostearate |
| | Nonoxynol-1 -2 -4 -5 -6 -7 | PEG-5 lanolate, P. oleamine |
| | Nonoxynol-8 -9 -10 -11 -12 -13 | PEG-5 soy sterol, P. soyamine |
| 20 | Nonoxynol-14 -15 -18 -20 -30 -40 -50 | PEG-5 stearamine, P. stearate |
| | Nonyl nonoxynol-5 -10 | PEG-5 tallow amine |
| | Oat (Avena sativa) flour | PEG-6 capric/caprylic glycerides |
| | Octoxynol-1 -3 -5 -8 -10 | PEG-6 cocamide |
| | Octoxynol 16, 30, 40 | PEG-6 C12-14 ether |
| 25 | 2-Octyl dodecyl alcohol | PEG-6 dilaurate, P. dioleate |
| | Octyldodecanol | PEG-6 distearate, P. isostearate |
| | Octyldodeceth-20 -25 | PEG-6 lauramide, P. laurate |
| | Oleamide DEA | PEG-6 oleate, P. palmitate |
| | Oleamidopropyl dimethylamine | PEG-6 sorbitan beeswax |
| 30 | Oleamine oxide | PEG-6 sorbitan laurate |
| | Oleic acid | PEG-6 sorbitan oleate |
| | Oleth-2 -3 -4 -5 -6 -7 -8 -9 | PEG-6 sorbitan stearate |
| | Oleth-10 -12 -15 -20 -23 | PEG-6 stearate |
| | Oleth-25 -30 -40 -50 | PEG-6-32 |
| 35 | Oleth 13 | PEG-6-32 stearate |
| | Oleth-2 phosphate | PEG-7 glyceryl cocoate |
| | Oleth-3 phosphate | PEG-7 hydrogenated castor oil |
| | Oleth-5 phosphate | PEG-7 oleate |
| | Oleth-10 phosphate | PEG-7.5 tallowamine |
| 40 | Oleth-20 phosphate | PEG-8 |
| | Palm acid | PEG-8 beeswax, P. castor oil |
| | Palmitamidopropyl dimethylamine | PEG-8 C12-14 ether |
| | Palmitic acid | PEG-8 dilaurate, P. dioleate |
| | PEG-2 cocamine, P. distearate | PEG-8 distearate |
| 45 | PEG-2 hydrogenated tallow amine | PEG-8 glyceryl laurate |
| | PEG-2 laurate, P. laurate SE | PEG-8 laurate, P. oleate |
| | PEG-2 oleamine, P. oleate | PEG-8, P. tallate |
| | PEG-2 soyamine, P. stearamine | PEG-9 castor oil |
| | PEG-2 stearate, P. stearate SE | PEG-9 diisostearate |
| 50 | PEG-3 cocamide | PEG-9 dioleate, P. distearate |
| | PEG-3 C12-C18 alcohols | PEG-9 laurate, P. oleate |
| | PEG-3 glyceryl isostearate | PEG-9 stearate |
| | PEG-3 glyceryl triisostearate | PEG-10 castor oil, P. cocamine |
| | | PEG-10 coconut oil esters |

	PEG-10 C12-18 alcohols	PEG-25 propylene glycol stearate
	PEG-10 dioleate	PEG-25 soy stearyl, P. stearate
	PEG-10 glyceryl isostearate	PEG-29 castor oil
	PEG-10 hydrogenated castor oil	PEG-30 castor oil
5	PEG-10 hydrogenated castor oil triisostearate	PEG-30 dipolyhydroxystearate
	PEG-10 lanolate	PEG-30 glyceryl cocoate
	PEG-10 polyglyceryl-2 laurate	PEG-30 glyceryl isostearate
	PEG-10 sorbitan laurate	PEG-30 glyceryl laurate
	PEG-10 soy sterol, P. stearamine	PEG-30 glyceryl oleate
10	PEG-10 stearate	PEG-30 glyceryl stearate
	PEG-11 babassu glycerides	PEG-30 hydrogenated castor oil
	PEG-11 castor oil	PEG-30 lanolin
	PEG-12 dilaurate, P. dioleate	PEG-30 sorbitan tetraoleate
	PEG-12 distearate	PEG-32 dilaurate, P. dioleate
15	PEG-12 glyceryl dioleate	PEG-32 distearate, P. laurate
	PEG-12 laurate, P. oleate	PEG-32 oleate, P. stearate
	PEG-12 stearate, P. tallate	PEG-33 castor oil
	PEG-14 avocado glycerides	PEG-35 castor oil, P. stearate
	PEG-15 castor oil	PEG-40 castor oil
20	PEG-15 cocamine	PEG-40 glyceryl isostearate
	PEG-15 glyceryl isostearate	PEG-40 glyceryl laurate
	PEG-15 glyceryl laurate	PEG-40 glyceryl triisostearate
	PEG-15 glyceryl ricinoleate	PEG-40 hydrogenated castor oil
	PEG-15 oleamine, P. oleate	PEG-40 hydrogenated castor oil PCA isostearate
25	PEG-15, P. stearamine	PEG-40 sorbitan diisostearate
	PEG-15 tallow amine	PEG-40 sorbitan lanolate
	PEG-15 tallow polyamine	PEG-40 sorbitan tetraoleate
	PEG-16	PEG-40 stearate
	PEG-16 hydrogenated castor oil	PEG-40/dodecyl glycol copolymer
30	PEG-16 soy sterol	PEG-42 babassu glycerides
	PEG-18 stearate	PEG-44 sorbitan laurate
	PEG-20 almond glycerides	PEG-45 palm kernel glycerides
	PEG-20 castor oil, P. dilaurate	PEG-45 safflower glycerides
	PEG-20 dioleate, P. distearate	PEG-50 lanolin, P. stearamine
35	PEG-20 glyceryl laurate	PEG-50 stearate
	PEG-20 glyceryl oleate	PEG-60 almond glycerides
	PEG-20 glyceryl stearate	PEG-60 castor oil
	PEG-20 glyceryl triisostearate	PEG-60 corn glycerides
	PEG-20 glyceryl tristearate	PEG-60 glyceryl triisostearate
40	PEG-20 hydrogenated castor oil	PEG-60 hydrogenated castor oil
	PEG-20 hydrogenated lanolin	PEG-60 hydrogenated castor oil isostearate
	PEG-20 lanolin, P. laurate	PEG-60 hydrogenated castor oil triisostearate
	PEG-20 oleate	PEG-60 shea butteer glycerides
	PEG-20 methyl glucose sesquisteate	PEG-60 sorbitan tetraoleate
45	PEG-20 sorbitan beeswax	PEG-70 mango glycerides
	PEG-20 sorbitan isostearate	PEG-75
	PEG-20 sorbitan triisostearate	PEG-75 castor oil, P. dilaurate
	PEG-20 sorbitan trioleate	PEG-75 dioleate, P. distearate
	PEG-20 stearate, P. tallow amine	PEG-75 lanolin, P. laurate
50	PEG-23 oleate, P. stearate	PEG-75 oleate
	PEG-24 hydrogenated lanolin	PEG-75 shea butter glycerides
	PEG-25 castor oil	PEG-75 shorea butter glycerides
	PEG-25 phytosterol	PEG-75 stearate

	PEG-80 sorbitan laurate	Polysorbate 65, 80, 81, 85
	PEG-90 stearate	Potassium alginate, P. cetyl phosphate
	PEG-100 castor oil	Potassium laurate, P. myristate
	PEG-100 hydrogenated castor oil	Potassium tallowate
5	PEG-100 lanolin, P. stearate	PPG-1-PEG-9 lauryl glycol ether
	PEG-120 distearate	PPG-2-ceteareth-9
	PEG-150 dilaurate, P. dioleate	PPG-3 isosteareth-9
	PEG-150 distearate, P. lanolin	PPG-3 PEG-6 oleylether
	PEG-150 laurate, P. oleate	PPG-5-buteth-7
10	PEG-150 stearate	PPG-5-ceteth-20
	PEG-200 castor oil	PPG-5-ceteth-10 phosphate
	PEG-200 glyceryl stearate	PPG-8 oleate
	PEG-200 hydrogenated castor oil	PPG-10 cetyl ether phosphate
	PEG-200 laurate, P. oleate	PPG-12-PEG-50 lanolin
15	PEG-400 laurate	PPG-15 stearyl ether
	Phosphate esters	PPG-24-buteth-27
	Phosphated amine oxides	PPG-25 laureth-25
	Phospholipids	PPG-26-buteth-26
	Poloxamer 101, 105, 122, 123, 124	PPG-26 oleate
20	Poloxamer 181, 182, 184, 185, 235, 237	PPG-36 oleate
	Poloxamer 238, 334, 338, 407	Propylene glycol alginate, P.g. dioleate
	Polyglyceryl-2 oleate	Propylene glycol hydroxystearate
	Polyglyceryl-2 polyhydroxystearate	Propylene glycol laurate, P.g. ricinoleate
	Polyglyceryl-2 sesquiisostearate	Propylene glycol ricinoleate SE
25	Polyglyceryl-2 stearate	Propylene glycol stearate
	Polyglyceryl-2-PEG-4-distearate	Propylene glycol stearate, SE
	Polyglyceryl-2-PEG-4-stearate	Quaternium-33
	Polyglyceryl-3 diisostearate, P. dioleate	Rapeseedamidopropyl ethyldimonium ethosulfate
	Polyglyceryl-3 distearate	Rice (Oryza sativa) bran wax
30	Polyglyceryl-3 methylglucose distearate	Ricinoleamide DEA
	Polyglyceryl-3 oleate, P. polyricinoleate	Ricinoleic acid
	Polyglyceryl-3 stearate	Saponins
	Polyglyceryl-4 oleate, P. stearate	Selenium protein complex
	Polyglyceryl-6 dioleate, P. distearate	Silicone quaternium-5, -6
35	Polyglyceryl-6 laurate, P. myristate	Sodium acrylates vinyl isodecanoate crosspolymer
	Polyglyceryl-6 oleate, P. polyricinoleate	Sodium caproyl lactylate
	Polyglyceryl-6 stearate	Sodium carbomer
	Polyglyceryl-8 oleate	Sodium cetyl sulfate
	Polyglyceryl-10 decaoleate	Sodium C12-15 pareth-15 sulfonate
40	Polyglyceryl-10 diisostearate	Sodium isostearyl lactylate
	Polyglyceryl-10 dioleate, P. dipalmitate	Sodium laureth-17 carboxylate
	Polyglyceryl-10 distearate, P. isosteareate	Sodium lauroyl lactylate
	Polyglyceryl-10 laurate, P. linoleate	Sodium lauryl sulfate
	Polyglyceryl-10 mixed fatty acids	Sodium nonoxynol-6 phosphate
45	Polyglyceryl-10 myristate	Sodium octyl sulfate
	Polyglyceryl-10 oleate	Sodium oleate
	Polyglyceryl-10 pentastearate	Sodium oleyl sulfate
	Polyglyceryl-10 stearate	Sodium phosphate
	Polyglyceryl-10 tetraoleate	Sodium stearyl lactylate
50	Polyglyceryl-10 trioleate	Sorbeth-20
	Polyoxyethylene polyoxypropylene glycol	Sorbitan isosteareate, S. laurate
	Polyquaternium-5, -31	Sorbitan oleate, S. palmitate
	Polysorbate 20, 21, 40, 60, 61	Sorbitan sesquiisostearate

- Sorbitan sesquioleate, S. sesquistearate
 Sorbitan stearate, S. triisostearate
 Sorbitan trioleate, S. tristearate
 Soyamidopropyl dimethylamine
 5 Soyamine
 Stearamide DEA
 Stearamide DIBA-stearate
 Stearamidoethyl diethylamine
 Stearamidopropyl dimethylamine, lactate
 10 Stearamidopropyl PG-dimonium chloride phosphate
 Stearamine
 Stearamine oxide
 Steareth-2, -4, -6, -7, -10, -11, -13
 15 Steareth-2 phosphate
 Steareth-15, -20, -21, -30, -100
 Stearic acid
 Sucrose cocoate, S. distearate
 Sucrose stearate
 20 Sythetic beeswax
 Tallow glyceride, acetylated hydrogenated
 Tallowamide DEA
 Tallowamidopropyl dimethylamine
 Talloweth-6
 25 Tetrasodium dicarboxyethyl stearyl sulfosuccinamide
 TEA-acrylates/acrylonitrogens copolymer
 Tissue extract
 Triceteareth-4 phosphate
 30 Trideceth-3, -5, -6, -7, -8
 Trideceth-9, -10, -12, -15
 Tridecyl ethoxylate
 Triethanolamine
 Trilaureth-4 phosphate
 35 Triolein
 Trisodium HEDTA
 Tristearin

Enzyme
 40 Fermented vegetable
 Ganoderma lucidum oil
 Lipase
 Papain
 Soy (Glycine soja) protein
 45 Superoxide dismutase

Essentail oil
 Aesculus chinensis extract
 Artemisia apiacea extract
 50 Brassica rapa-depressa extract
 Caraway (Carum carvi) oil
 Cardamon (Elettaria cardamomum) oil
 Clove (Eugenia caryophyllus) oil

 Eclipta alba extract
 Eucalyptus globulus oil
 Euphatorium fortunei extract
 Euterpe precatorea extract
 Hierochloe odorata extract
 Kadsura heteliloca extract
 Ligustrum lucidum extract
 Lysimachia foenum-graecum extract
 Melaleuca bracteata extract
 Melaleuca hypercifolia extract
 Melaleuca symphyocarp extract
 Melaleuca uncinata extract
 Melaleuca wilsonii extract
 Nasturtium sinensis extract
 Nelumbium speciosum extract
 Paulownia imperialis extract
 Rosemary (Rosmarinus officinalis) oil
 Selinum spp. extract
 Trichomonas japonica extract
 Withania somniferum extract
 Yuzu oil
 Ziziphus jujuba extract

Exfoliant
 Apricot (Prunus armeniaca) kernel powder
 Glycolic acid
 Jojoba (Buxus chinensis) seed powder
 Lactic acid Papain
 PEG 11-Avocado Glycerides
 Willow (Salix alba) bark extract

Fiber
 Corn (Zea mays) cob powder
 Nylon-66
 Oat (Avena sativa) bran, meal
 Rayon

Film former
 Acetylated lanolin
 Acrylates/hydroxyesters acrylates copolymer
 Acrylate/octylarylamide copolymer
 Acrylate copolymer alkylated
 polyvinylpyrrolidone
 Ammonium acrylates/acrylonitrogens copolymer
 Betaglucan
 Bladderwrack (Fucus vesiculosus) extract
 Carboxymethylchitosan
 N,O-Carboxymethylchitosonium
 Chitosan lactate
 Collagen
 Collagen phthalate
 Colloidal oatmeal
 Desamido collagen

- Diisostearoyl trimethylolpropane siloxy silicate
DMHF
Ethyl ester of hydrolyzed silk
Ethylcellulose
5 Gellan gum
Glycerin/diethylene glycol/adipate crosspolymer
High beta-glucan barley flour
Hydrolyzed collagen
Hydrolyzed keratin
10 Hydrolyzed oat protein
Hydrolyzed pea protein
Hydrolyzed reticulin
Hydrolyzed RNA
Hydrolyzed silk
15 Hydrolyzed soy protein
Hydrolyzed wheat protein
Hydrolyzed wheat protein/dimethicone copolyol
phosphate copolymer
Hydrolyzed wheat protein/PVP copolymer
20 Hydroxypropylcellulose
Hydroxypropyltrimonium gelatin
Jojoba (*Buxus chinensis*) oil
Lactoglobulin
Myristoyl hydrolyzed collagen
25 Nitrocellulose
Oat (*Avena sativa*) extract, protein
Polyethylene, ionomer
Polyquaternium-6, -7, -11, -22, -39
Polyvinyl acetate, P. alcohol
30 PVM/MA decadiene crosspolymer

PVP/Dimethiconylacrylate/polycarbamyl/pol
yglycol ester
35 PVP/dimethylaminoethylmethacrylate copolymer
PVP/dimethylaminoethylmethacrylate/
polycarbamyl/polyglycol ester
PVP/eicosene copolymer
PVP/hexadecene copolymer
40 PVP/hydrolyzed wheat protein copolymer
Rice peptide
Sericin
Shea butter (*Butyrospermum parkii*)
Shellac
45 Sodium C12-15 pareth-7 sulfonate
Sodium hyaluronate
Souble collagen
Souble keratin
Souble wheat protein
50 TEA-acrylates/acrylonitrogens copolymer
Tosylamide/epoxy resin
Tricontanyl PVP
Triethonium hydrolyzed collagen ethosulfate
- Wheat peptide
- Fixative**
Acrylates copolymer
Adipic acid/dimethylaminohydroxypropyl
diethylene triamine copolymer
AMP-acrylates copolymer
Hydrolyzed zein
Methacrylol ethyl betaine/acrylates copolymer
Methyl rosinat
Polyquaternium-4, -10, -29
PPG-20 methyl glucose ether
Sodium polystyrene sulfonate
- Flavor (aroma)**
Benzaldehyde
Caraway (*Carum carvi*) oil
Cardamon (*Elettaria cardamomum*) oil
Cinnamon (*Cinnamomum casia*) oil
Clove (*Eugenia caryophyllus*) oil
Ethyl vanillin
Eucalyptus globulus oil
Flavor (aroma)
Glutamic acid
Glycyrrhetic acid
Glycyrrhizic acid
Glycyrrhizin, ammoniated
Methyl salicylate
Orange (*Citrus aurantium dulcis*) oil
Peppermint (*Mentha piperita*) oil
Rosemary (*Rosmarinus officinalis*) oil
Sodium glycyrrhizinate
Thymol Vanillin
- Foam booster**
Alkyldimethylamine oxide
Babassuamidopropyl betaine
Babassuamidopropylamine oxide
Caprylyl pyrrolione
Carrageenan (*Chondrus crispus*)
Cocamide DEA, C. MIPA
Cocamidopropyl betaine
Cocamidopropyl dimethylamine lactate
Cocamidopropyl hydroxysultaine
Coco-betaine
Coco/oleamidopropyl betaine
Cocoyl amido hydroxy sulfo betaine
Cocoyl monoethanolamide ethoxylate
DEA-hydrolyzed lecithin
Dimethyl lauramine
Disodium cocamido MEA-sulfosuccinate
Disodium cocoamphodiacetate
Disodium lauramido MEA-sulfosuccinate

- Disodium laureth sulfosuccinate
 Lauramide MIPA
 Lauramidopropyl betaine
 Lauryl betaine
 5 Myristamidopropyl dimethylamine dimethicone
 copolyol phosphate
 Myristamine oxide
 Octyldodecyl benzoate
 Oleamide DEA, O. MIPA
 10 Oleyl betain
 Palm kernelamide DEA
 PEG-3 lauramine oxide
 PPG-15 stearyl ether benzoate
 PEG-7000
 15 Sodium cocoamphoacetate
 Sodium cocoyl isethionate
 Sodium laureth sulfate
 Sodium lauroyl wheat amino acids
 Sodium octoxynol-2 ethane sulfonate
 20 Soyamidopropyl betaine
 Tallowamide MEA
- Foam stabilizer**
 Babassuamidopropylamine oxide
 25 Behenamine oxide
 Caprylyl pyrrolidone
 Cetamine oxide
 Cocamide DEA, C. MEA, C. MIPA
 Cocamidopropyl betaine
 30 Cocamidopropyl hydroxysultaine
 Cocamidopropyl lauryl ether
 Cocamidopropylamine oxide
 Cocamine oxide
 Dihydroxyethyl C12-15 alkoxypropylamine oxide
 35 Dihydroxyethyl cocamine oxide
 Dihydroxyethyl tallowamine oxide
 Erucamidopropyl hydroxysultaine
 Hydroxypropyl methylcellulose
 Isostearamide DEA
 40 Lauramide DEA, L. MEA
 Lauramido propylamine oxide
 Lauramine oxide
 Laureth-10
 Lauric-linoleic DEA
 45 Lauroyl-linoleoyl diethanolamide
 Lauroyl-myristoyl diethanolamide
 Lauryl pyrrolidone
 Linoleamide MEA
 Myristamide DEA, M. MEA
 50 Oleamide MEA
 Palmitamide MEA
 PEG-3 lauramide
 PEG-4 oleamide
- Ricinoleamide MEA
 Sesamide DEA
 Wheat germamide DEA
- Foamer**
 Ammonium laureth sulfate
 Ammonium laureth-5 sulfate
 Ammonium laureth-12 sulfate
 Ammonium lauryl sulfate, A.I. sulfosuccinate
 Ammonium myreth sulfate
 Ammonium nonoxynol 4 sulfate
 Capryl caprylylglucoside
 Cetyl betaine
 Cocamide
 Cocamidopropyl dimethylamine
 Cocamidopropyl dimethylamine lactate
 DEA-laureth sulfate
 DEA lauryl sulfate
 Decyl glucoside
 Disodium caproamphodiacetate
 Disodium caproamphodipropionate
 Disodium capryloamphodiacetate
 Disodium cocoamphodipropionate
 Disodium lauroamphodiacetate
 Disodium lauroamphodipropionate
 Disodium lauryl sulfosuccinate
 Disodium oleamido MEA-sulfosuccinate
 Disodium oleamido MIPA-sulfosuccinate
 Disodium PEG-4 cocoamido MIPA-
 sulfosuccinate
 Isostearamidopropylamine oxide
 Lauryl glucoside
 Methyl gluceth-20
 MEA-laureth sulfate
 Mixed isopropanolamines myristate
 MIPA-lauryl sulfate
 PEG-80 sorbitan laurate
 PEG lauryl ether sulfate
 Potassium cocoate, P. lauryl sulfate
 Quillaja saponaria extract
 Sodium caproamphoacetate
 Sodium capryloamphoacetate
 Sodium capryloamphohydroxypropylsulfonate
 Sodium cocoamphoacetate
 Sodium cocoamphopropionate
 Sodium C12-15 pareth-25 sulfate
 Sodium C12-15 pareth-3 sulfonate
 Sodium C12-15 pareth-15 sulfonate
 Sodium C14-16 olefin sulfonate
 Sodium deceth sulfate
 Sodium laureth-2 sulfate
 Sodium laureth-3 sulfate
 Sodium laureth-7 sulfate

	Sodium lauriminodipropionate	Algin
	Sodium laurylether sulfosuccinate	Aluminum distearate, A. tristearate
	Sodium lauryl sulfate, S.I. sulfoacetate	Ammonium acrylates/acrylonitrogens copolymer
	Sodium lauryl sulfosuccinate	Behenic acid
5	Sodium magnesium laureth sulfate	Calcium alginate
	Sodium myreth sulfate, S. myristyl sulfate	Carbomer
	Sodium trideceth sulfate	Carboxymethylchitosan
	Sodium tridecyl sulfate	N,O-Carboxymethylchitosonium
10	TEA-dodecylbenzenesulfonate	Carrageenan (Chondrus crispus)
	TEA-laureth sulfate	Ceresin
	TEA-lauroyl collagen amino acids	Cetearyl candelillate
	TEA-lauroyl keratin amino acids	Dibenzylidene sorbitol
	TEA-lauryl sulfate	Ethylene/acrylic acid copolymer
	TEA-palm kernel sarcosinate	Ethylene/VA copolymer
15	Wheat germamidopropyl betain	Gellan gum
	Yucca vera extract	Hexanediol behenyl beeswax
	Fragrance	Hydrogenated jojoba oil
	Chamaecyparis obtusa oil	Hydrogenated jojoba wax
20	Orange (Citrus aurantium dulcis) oil	Hydroxystearic acid
	Peppermint (Mentha piperita) oil	Jojoba wax
	Phenethyl alcohol	Laneth-5, -15
	Fragrance solvent	Montmorillonite
25	Benzyl benzoate	Myreth-3-octanoate
	Diethyl phthalate	Octacosanyl stearate
	Triacetin	Oleth-3 phosphate
	Triethyl citrate	Oleth-10 phosphate
30	Fungicide	Poloxamer 105, 123, 124, 185, 235
	Astrocaryum murumuru extract	Poloxamer 237, 238, 338, 407
	Azadirachta indica extract	Polyethylene
	Captan	Polyethylene, oxidized
	Diiodomethyltolylsulfone	Polyquaternium-31
35	Ficus racemosa extract	Potassium alginate, P. chloride
	Hexetidine	Sodium nonoxynol-6 phosphate
	Ligusticum jeholense extract	Sodium tallowate
	Mauritia flexosa extract	Synthetic beeswax
	Melaleuca symphyocarp extract	TEA-acrylates/acrylonitrogens copolymer
40	Melia australasica extract	Tribehenin
	Melia azadirachta extract	Glosser
	Mushroom (Cordyceps sabolifera) extract	C18-36 acid glycol ester
	Mushroom (Coriolus versicolor) extract	Diphenyl dimethicone
	Sodium undecylenate	Methyl gluceth-10
45	Tea tree (Melaleuca alternifolia) oil	Octyldodecyl lactate
	Thiabendazole	Phenyl methicone, P. trimethicone
	Undecylenamide MEA	Polyglyceryl-2 dioleate
	Zinc undecylenate	Polyisobutene
50	Ziziphus jujuba extract	Polyisobutene/isohexapentacontahectane
	Gellant	Polyisobutene/isooctahexacontane
	Acrylic acid/acrylonitrogens copolymer	Polymethacrylamidopropyltrimonium chloride
	Agar	PPG-10 methyl glucose ether
		PPG-36 oleate
		Tea (Camellia sinensis) oil
		Tribehenin

Hair care

- 5 Gentiana scabra extract
Maidenhair fern extract
Nicotinamide
Nicotinic acid
Paeonia lactiflorum extract
Watercress (*Nasturtium officinale*) extract

Hair conditioner

- 10 Amino bispropyl dimethicone
Amodimethicone
AMPD-isostearoyl hydrolyzed collagen
Aqua Ichthammol
Babassu (*Orbignya oleifera*) oil
15 Babassuamidopropyl ammonium chloride
Behenamidopropyl dimethylamine
Behenamidopropyl hydroxyethyl dimonium chloride
Behentrimonium chloride
20 Biotin
Bishydroxyethyl biscetyl malonamide
Borageamidopropyl phosphatidyl PG-dimonium chloride
Brazil nut (*Bertholletia excelsa*) oil
25 Cetearyl trimonium methosulphate
Cetrimonium bromide, C. chloride
Cetyl pyridinium chloride
Chia (*Salvia hispanica*) oil
Chrysanthemum morifolium extract
30 Cinchona succirubra extract
Cocamidopropyl dimethylamine propionate
Coccinea indica extract
Cocodimonium hydroxypropyl hydrolyzed collagen
35 Cocodimonium hydroxypropyl hydrolyzed keratin
Cocodimonium hydroxypropyl silk amino acids
Cocodimonium hydroxypropyl hydrolyzed wheat protein
Cocodimonium hydroxypropyloxyethyl cellulose
40 Cocotrimonium chloride
Collagen amino acids
Cyclomethicone
L-cysteine HCL
Dibehenyldimonium methosulfate
45 Dicetyldimonium chloride
Dicocodimonium chloride
Dihydroxyethyl tallowamine oleate
Dimethicone
Dimethicone copolyol acetate, D.c. almondate
50 Dimethicone copolyol amine
Dimethicone copolyol bishydroxyethylamine
Dimethicon copolyol isostearate, D.c. laurate
Dimethicone copolyol olivate

Dimethicone hydroxypropyl trimonium chloride
Dimethyl lauramine dimer dilinoleate
Dioleylamidoethyl hydroxyethylmonium methosulfate
Dipalmitoylethyl hydroxyethylmonium methosulfate
Diphenyl dimethicone
Ditallowdimonium chloride
N-Dodecyl-N,N-dimethyl-N-(dodecyl acetate) ammonium chloride
Entada phaseoloides extract
Ethyl ester of hydrolyzed animal protein
Gelatin
Ginseng hydroxypropyltrimonium chloride butylene glycol
Hematin
Honey (Mel)
Hydrolyzed collagen
Hydrolyzed hair keratin
Hydrolyzed vegetable protein
Hydrolyzed wheat protein/dimethicone copolyol acetyl copolymer
Hydrolyzed wheat protein hydroxypropyl polysiloxane
Hydroxyethyl cetyldimonium phosphate
Hydroxypropyl trimonium hydrolyzed collagen
Hydroxypropyl trimonium hydrolyzed wheat protein polysiloxane copolymer
Hyssop (*Hyssopus officinalis*) extract
Inga edulis extract
Isostearamidopropylamine oxide
Isostearoyl hydrolyzed collagen
Keratin amino acids
Kiwi (*Actinidia chinensis*) fruit extract
Kola (*Cola acuminata*) extract
Laminaria japonica extract
Laurimonium chloride
Lauryl hydroxypropyl trimonium polysiloxane copolymer
Lauryldimethylamine isostearate
Lauryldimonium hydroxypropyl hydrolyzed collagen
Lauryldimonium hydroxypropyl hydrolyzed wheat protein
Linoleamidopropyl dimethylamine dimer dilinoleate
Linoleamidopropyldimethylamine
Lysimachia foenum-graecum extract
Melaleuca hypericifolia extract
Ocimum santum extract
Olealkonium chloride
Oleyl dimethylamidopropyl ethonium ethosulfate
Palmitamidodecanediol

- Panthenyl ethyl ether
 Paulownia imperialis extract
 Peach (*Prunus perisca*) leaf extract
 PEG-2 cocomonium chloride
 5 PEG-120 jojoba acid/alcohol
 PG-hydroxycellulose lauryldimonium chloride
 PG-hydroxyethylcellulose cocodimonium chloride
 PG-hydroxyethylcellulose lauryldimonium chloride
 10 PG-hydroxyethylcellulose stearyldimonium chloride
 Phenyl trimethicone
 Phospholipids
 Phytantriol
 15 Polyoxyethylene polyoxypropylene glycol
 Polypropylene glycol
 Polyquaternium-4, -6, -7, -10
 Polyquaternium-22, -28, -39
 PPG-5-ceteth-10 phosphate
 20 Propyltrimonium hydrolyzed collagen
 propyltrimonium hydrolyzed soy protein
 Quaternium-18, -75, -81, -82
 Quaternium-79 hydrolyzed keratin
 Quaternium-79 hydrolyzed silk
 25 *Sambucus nigra* extract, oil
 Sesamidopropalkonium chloride
 Silicone quaternium-1, -8
 Sodium cocoamphoacetate
 Sodium cocoyl hydrolyzed collagen
 30 Sodium polystyrene sulfonate
 N-Soya-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
 Steapyrium chloride
 Stearalkonium chloride
 35 Stearamidopropyl dimethylamine
 Steardimonium hydroxypropyl hydrolyzed wheat protein
 STeartrimonium chloride
 Steartrimonium hydroxyethyl hydrolyzed collagen
 40 N-Stearyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
 Stenocalyx micalii extract
 Sulfur
 Tallowbenzyltrimethylammonium chloride,
 45 hydrogenated
 Tallowtrimonium chloride
 Tea (*Camellia sinensis*) oil
 TEA-cocoyl hydrolyzed soy protein
 Thenoyl methionate
 50 Trimethylsilylamodimethicone
 Wheat amino acids

Hair set resin polymer

Acrylates/acrylamide copolymer
 Acrylates/PVP copolymer
 Acrylates/hydroxyesters acrylates copolymer
 Acrylates/octylarylamide copolymer
 AMP-acrylates copolymer
 Butylester of PVM-MA copolymer
 Carboxylated vinylacetate terpolymer
 Diglycol/CHDM/isophthalates/SIP copolymer
 Eclipta alba extract
 Ethyl ester of PVM/MA copolymer
 Hydroxypropyl chitosan
 Isopropyl ester of PVM/MA copolymer
 Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
 Polymethacrylamidopropyltrimonium chloride
 Polypropylene glycol oligosuccinate
 PVP
 PVP/dimethylaminoethylmethacrylate copolymer
 PVP/Polycarbamyl polyglycol ester
 PVP/VA copolymer
 PVP/VA vinyl propionate copolymer
 Sodium polyacrylate
 VA/butyl maleate/isobornyl acrylate copolymer
 VA/crotonates/vinyl neodecanoate copolymer
 VA/crotonates/vinyl propionate copolymer
 VA/crotonates copolymer
 Vinyl caprolactam/PVP/
 dimethylaminoethylmethacrylate copolymer

Hair sheen

Maidenhair fern extract
 Tetrabutoxypropyl methicone

Hair waving

Ammonium thioglycolate, A. thiolactate
 Argania spinosa oil
 L-cysteine HCL
 Cystine
 Diammonium dithiodiglycolate
 Dilauryl thiodipropionate
 Ethanolamine sulfite, E. thioglycolate
 Ethanolamine thiolactate
 Glyceryl thioglycolate
 Hydroxymethyl dioxoazabicyclooctane
 Jojoba esters
 Monoethanolamine thiolactate
 Shea butter, ethoxylated
 Sodium thioglycolate
 Thioglycerin
 Thioglycolic acid
 Thiolactic acid

Humectant

- Acetamide MEA
 Acetyl monoethanolamine
 6-(N-Acetylamino)-4-oxyhexyltrimonium
 5 chloride
 Adenosine phosphate
 Ammonium lactate
 Atelocollagen
 Calcium pantothenate
 10 Calcium stearoyl lactylate
 Carboxymethyl chitin
 Carboxymethyl chitosan succinamide
 Chitosan PCA
 Cholesteryl hydroxystearate
 15 Collagen amino-polysiloxane hydrolyzate
 Colloidal oatmeal
 Copper PCA methylsilanol
 Dimethicone copolyol laurate
 Dipotassium glycyrrhizinate
 20 Ethyl ester of hydrolyzed silk
 Fatty quaternary amine chloride complex
 Glucos glutamate
 Glycereth-4,5-lactate
 Glycereth-7, -12, -26
 25 Glycerin
 Honey extract
 Hydrogenated passion fruit oil
 Hydrolyzed casein
 Hydrolyzed fibronectin
 30 Hydrolyzed glycosaminoglycans
 Hydrolyzed oat protein
 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydroxypropyl chitosan
 35 Hydroxypropyltrimonium hydrolyzed casein
 Hydroxypropyltrimonium hydrolyzed silk
 Hydroxypropyltrimonium hydrolyzed soy protein
 Hydroxypropyltrimonium hydrolyzed wheat
 protein
 40 Keratin amino acids
 Lactamide DGA, MEA
 Lactamidopropyl trimonium chloride
 Lactic acid
 Lactose
 45 Lauroyl lysine
 Maltitol
 Mannitol
 Methyl gluceth-10, -20
 Natto gum
 50 Oat (*Avena sativa*) extract, protein
 Panthenol
 Panthenyl ethyl ether
 PCA

PEG-4

- Polyamino sugar condensate
 Potassium lactate
 Propylene glycol
 Propyltrimonium hydrolyzed collagen
 propyltrimonium hydrolyzed soy protein
 Propyltrimonium hydrolyzed wheat protein
 Quaternium-22
 Rice (*Oryza sativa*) germ oil
 Sea Salts (Maris sal)
 Shea butter (*Butyrospermum parkii*)
 Silk powder
 Sodium behenoyl lactylate
 Sodium caproyl lactylate
 Sodium cocoyl lactylate
 Sodium hyaluronate
 Sodium isostearoyl lactylate
 Sodium lactate, S. lauroyl lactylate, S. PCA
 Sodium polyglutamate
 Sodium stearoyl lactylate
 Sorbitan laurate
 Sorbitan sesquiisostearate
 Sorbitol
 Sphingolipids
 TEA-PCA
 Urea

Hydrotrope

- Ammonium cumenesulfonate
 Ammonium xylenesulfonate
 Cetamine oxide
 Cocamidopropylamine oxide
 Lauramine oxide
 Potassium toluenesulfonate
 PPG-2-isodeceth-4, -6, -9, -12
 Sodium cumene sulfonate
 Sodium laureth-13-carboxylate
 Sodium toluene sulfonate
 Sodium xylene sulfonate
 Trideceth-19-carboxylic acid

Intermediate

- Caprylic acid
 Deceth-3
 Diethyl succinate
 Dimethylaminopropylamine
 DM hydantoin
 Dodecylbenzene sulfonic acid
 Ethylene dichloride
 4-Fluoro 3-nitro aniline
 Lauramine
 Methyl benzoate, M. cocoate
 Methyl isostearate, M. laurate

	Methyl myristate, M. palmitate	Mango (Mangifera indica) oil
	Oleic acid	Mineral oil (Paraffinum liquidum)
	Ricinoleic acid	Mink oil
	Tall oil acid	Monostearyl citrate
5	Tallow acid	Neatsfoot oil
	Lathering agent	Oleostearine
	Ammonium cocoyl sarcosinate	Partially hydrogenated soybean oil
	Ammonium C12-15 alkyl sulfate	PEG-2 stearate
10	Ammonium lauroyl sarcosinate	PEG-4 dilaurate
	Cocamide MEA ethoxylate	PEG-5M
	Cocamidopropyl dimethylaminohydroxypropyl hydrolyzed collagen	PEG-9M
	Lauroyl sarcosine	PEG-23M
15	Myristoyl sarcosine	PEG-27 lanolin
	Sodium cocoyl sarcosinate	PEG-30 lanolin
	Sodium lauroyl sarcosinate	PEG-40 lanolin, P. stearate
	Sodium methyl cocoyl taurate	PEG-45M
	Sodium myristoyl sarcosinate	PEG-90M
20	TEA-cocoyl sarcosinate	PEG-160M
	TEA-lauroyl sarcosinate	PEG/PPG-17/6 copolymer
	Lubricant	Pentaerythrityl tetrapelargonate
	Aluminum salt octenyl succinate	Petrolatum
25	Amodimethicone	Phenethyl dimethicone
	Boron nitride	Phenyl methicone
	Calcium aluminum borosilicateCalcium stearate	Polyacrylamidomethylpropane sulfonic acid
	Caprylic/capric triglyceride	Polybutane
	Coceth-7 carboxylic acid	Polydimethicone copolyol
30	Coconut (Cocos nucifera) oil	Polyglycerol ester of mixed vegetable fatty acids
	Cyclomethicone	Polymethylsilsesquioxane
	Diisodecyl adipate	Potassium laurate, P. myristate
	Diisostearyl fumarate	Potassium tallowate
	Dimethicone copolyol	PPG-2 myristyl ether propionate
35	Glyceryl isostearate, G. oleate	PPG-3 myristyl ether
	Glyceryl polymethacrylate	PPG-9-buteth-12
	Gold of Pleasure oil	PPG-11 stearyl ether
	Hyaluronic acid	PPG-12-buteth-16
	Hydrogenated coconut oil	PPG-12-PEG-50 lanolin
40	Hydrogenated cottonseed oil	PPG-14 butyl ether
	Hydrogenated palm oil	PPG-20 cetyl ether
	Hydrogenated soybean/cottonseed oil	PPG-20-buteth-30
	Hydrogenated soybean oil	PPG-24-buteth-27
	Hydrogenated vegetable oil	PPG-28-buteth-35
45	Hydrolyzed oat flour	PPG-36 oleate
	Hydroxypropyl guar	PPG-40 butyl ether
	Isodecyl stearate	Quaternium-79 hydrolyzed keratin
	Isopropyl lanolate	Quaternium-79 hydrolyzed silk
	Isostearyl diglyceryl succinate	Rice (Oryza sativa) starch
50	Jojoba esters	Shea butter (Butyrospermum parkii) extract
	Lanolin oil	Shorea stenoptera butter
	Laureth-3 phosphate	Silica
	Magnesium myristate, M. stearate	Stearamide MEA, S. MEA-stearate
		Stearoxytrimethylsilane
		Stearyl dimethicone
		Triisostearyl citrate

- Triolein
 Trisodium HEDTA
 Triundecanoic
 Zinc laurate, Z. stearate
- 5
- Miscellaneous**
Adhesion promoter — Glycerin/diethylene glycol/adipate crosspolymer
Analgesic — Glycol salicylate
 10 *Anesthetic* — Benzocaine
Anti-elastic — Hydrolyzed Ulva lactuca extract
Anti-itching — Sodium shale oil sulfonate
Antiacid — Magnesium hydroxide, Magnesium silicate, Simethicone
 15 *Antifoam* — Dimethicone silylate, Simethicone
Antilipasic — Laminaria saccharina extract
Antipruritic — Coal tar
Antispasmodic — Garlic (*Allium sativum*) extract
Antiwrinkle — Chinese hibiscus (*Hibiscus rosa-sinensis*) extract
 20 *Barrier* — Glycerin/diethylene glycol/adipate crosspolymer
Cell regeneration — Glycoproteins, Hydrolyzed Ulva lactuca extract
 25 *Co-emulsifier* —
 Cholesteryl/beheryl/octyldodecyl lauroyl glutamate, Isododecane
Colloid — Gelatin
Cooling agent — Menthyl PCA, Menthone
 30 *Detoxifier* — Clover (*Trifolium pratense*) extract
Dye stabilizer — Uric acid
Filler — Mica
Fragrance stabilizer — 2,2',4,4'-
 Tetrahydroxybenzophenone
 35 *Free radical scavenger* — Melanin
IR filter — Corallina officinalis
Lanolin substitute — PEG-80 jojoba acid/alcohol
Lipolytic — Gelidium cartilagineum
 40 *Oxidant* — Barium peroxide, Hydrogen peroxide, Urea peroxide
Oxygen carrier — Perfluorodecalin
Peroxide stabilizer — Phenacetin, Sodium stannate
 45 *Scalp stimulant* — Birch (*Betula alba*) leaf extract
Sebostatic — Laminaria saccharina extract
Shine enhancer — Hydrolyzed wheat protein hydroxypropyl polysiloxane
 50 *Skin barrier lipid* — Ceramide 3, N(27-Stearoyloxy-heptacosanoyl) phytosphingosine
Skin clarifier — Oat (*Avena sativa*) bran extract
Skin purifier — Birch (*Betula alba*) leaf extract
- Substantivity* — Dimethicone copolyol bishydroxyethylamine, Dimethicone hydroxypropyl trimonium chloride, Trimethylsilylamodimethicone
Sunless tanning — Acetyl tyrosine, Eclipta alba extract in white emulsion
Tonic — Kiwi (*Actinidia chinensis*) fruit extract, Matricaria (*Chamomilla recutita*) extract, Orange (*Citrus aurantium dulcis*) peel extract
Viscosity stabilizer — Diisodecyl adipate
Spreading agent — Stearyl heptanoate
Wound healing — Comfrey (*Symphytum officinale*) leaf extract
Waterproofing agent — PVP/eicosene copolymer, PVP/hexadecene copolymer, Tricontanyl PVP
- Moisture barrier**
 Acrylates/octylarylamide copolymer
 Betaglukan
 C16-18 alkyl methicone
 Cholesterol
 Glycolipids
 Isoeicosane
 Isohexadecane
 Lanosterol
 Octyl pelargonate, O. stearate
 Polyisobutene
 Polyisobutene/isohexapentacontahectane
 Polyisobutene/isooctahexacontane
 Silica silylate
 Trihydroxypalmitamidohydroxy propyl myristyl ether
 Trimethylsiloxysilicate
- Moisturizer**
 Acetamidopropyl trimonium chloride
 Adenosine triphosphate
 Aesculus chinensis extract
 Algae (*Ascophyllum nodosum*) extract
 Algae extract
 Aloe barbadensis, A.b. extract
 Ammonium lactate
 Amniotic fluid
 Apple (*Pyrus malus*) extract
 Apricot (*Prunus armeniaca*) kernel oil
 Arginine PCA
 Atelocollagen
 Artemisia apiacea extract
 Astrocryum murumuru extract
 Avocado (*Persea gratissima*) extract, oil
 Avocado (*Persea gratissima*) unsaponifiables
 Babassu (*Orbignya oleifera*) oil

	Bactri gasipaes extract	Evening primrose (<i>Oenothera biennis</i>) extract, oil
	Benincasa hispida extract	Galla sinensis extract
	Betaglucan	Ganoderma lucidum oil
	Betaine	Ginseng (<i>Panax ginseng</i>) extract
5	Borage (<i>Borago officinalis</i>) seed oil	Gleditsia sinensis extract
	Brazil nut (<i>Bertholettia excelsa</i>) extract, oil	Glycereth-12
	C10-30 cholesterol/lanosterol esters	Glyceryl alginate, G. collagenate
	Calcium pantothenate	Glyceryl polymethacrylate
	Calcium protein complex	Glycolic acid
10	Caprylic/capric triglyceride	Glycolipids
	Caprylic/capric/lauric triglyceride	Glycosaminoglycans
	Caprylic/capric/linoleic triglyceride	Glycosphingolipids
	Caprylic/capric/oleic triglycerides	Gnetum amazonicum extract
	Cashew (<i>Anacardium occidentale</i>) nut oil	Grape (<i>Vitis vinifera</i>) seed oil
15	Celastrus paniculata extract	Hazel (<i>Corylus avellana</i>) nut oil
	Ceramide 33 (liquid soy extract)	Honey extract
	Chia (<i>Salvia hispanica</i>) oil	Hyaluronic acid
	Chinese hibiscus (<i>Hibiscus rosa-sinensis</i>) extract	Hybrid safflower (<i>Carthamus tinctorius</i>) oil
	Chitin	Hydrogenated castor oil
20	Chitosan, C. PCA	Hydrogenated coconut oil
	Cholesteric esters	Hydrogenated cottonseed oil
	Cholesterol	Hydrogenated lecithin
	Cholesteryl/behanyl/octyldodecyl lauroyl glutamate	Hydrogenated palm oil
25	Cocodimonium hydroxypropyl hydrolyzed collagen	Hydrogenated polyisobutene
	Cocodimonium hydroxypropyl hydrolyzed silk	Hydrogenated soybean oil
	Cocodimonium hydroxypropyl hydrolyzed wheat protein	Hydrogenated soybean/cottonseed oil
30	Cocodimonium hydroxypropyl silk amino acids	Hydrogenated vegetable oil
	Collagen	Hydrolyzed carbolipoprotein
	Collagen amino acids, C. phthalate	Hydrolyzed collagen
	Copper aspartate, C. protein complex	Hydrolyzed elastin
	Corn (<i>Zea mays</i>) oil	Hydrolyzed fibronectin
35	Cottonseed (<i>Gossypium</i>) oil	Hydrolyzed glycosaminoglycans
	Crataegus cuneata extract	hydrolyzed keratin
	Cucumber (<i>Cucumis sativus</i>) extract	Hydrolyzed milk protein
	Desamido collagen	Hydrolyzed oats
	Dicaprylyl maleate	Hydrolyzed pea protein
40	Diisocetyl dodecanedioate	Hydrolyzed placental protein
	Diisostearyl adipate	Hydrolyzed rice protein
	Dimethyl hyaluronate	Hydrolyzed transgenic collagen
	Dimethylsilanol hyaluronate	Hydrolyzed serum protein
	Diocetyldodecyl dimer dilinoleate	Hydrolyzed silk
45	Diocetyldodecyl dodecanedioate	Hydrolyzed sweet almond protein
	Dipentaerythritol fatty acid ester	Hydrolyzed wheat protein
	Dog rose (<i>Rosa canina</i>) hips extract	Hydroxyethyl chitosan
	Dog rose (<i>Rosa canina</i>) seed extract	Inositol
	Echitea glauca extract	Isodecyl salicylate
50	Elastin amino acids	Isostearyl hydrolyzed animal protein
	Emblica officinalis extract	Jojoba (<i>Buxus chinensis</i>) oil
	Ethyl minkate	Jojoba esters
	Eugenia jambolana extract	Keratin amino acids
		Kiwi (<i>Actinidia chinensis</i>) fruit extract
		Kola (<i>Cola acuminata</i>) extract
		Kukui (<i>Aleurites molaccana</i>) nut oil

- | | | |
|----|--|---|
| | Lactamide DGA, L. MEA | Pfaffia spp. extract |
| | Lactic acid | Pistachio (<i>Pistacia vera</i>) nut oil |
| | Lactobacillus/whey ferment | Placental protein |
| | Lactococcus hydrolysate | Plankton extract |
| 5 | Lactoyl methylsilanol elastinate | Polyamino sugar condensate |
| | Lanolin alcohol | Polybutene |
| | Lauryl PCA | Polyunsaturated fatty acids |
| | Lecithin | Potassium DNA, P. lactate, P. PCA |
| | Lesquerella fendleri oil | PPG-8/SMDI copolymer |
| 10 | Liposomes | PPG-20 methyl glucose ether distearate |
| | Lysine PCA | Propylene glycol dicaprylate/dicaprate |
| | Macadamia ternifolia nut oil | Propylene glycol dioctanoate |
| | Magnesium aspartate | Pumpkin (<i>Cucurbita pepo</i>) seed oil |
| | Maltitol | Quinoa (<i>Chenopodium quinoa</i>) extract |
| 15 | Manganese aspartate | Rapeseed (<i>Brassica campestris</i>) oil |
| | Mango (<i>Mangifera indica</i>) oil | Rehmannia chinensis extract |
| | Mannan | Rice (<i>Oryza sativa</i>) bran oil |
| | Marine polyaminosaccharide | Rose Water |
| | Mauritella armata extract | Royal jelly extract |
| 20 | Maximilliana regia extract | Saccharide isomerate |
| | Meadowfoam (<i>Limnanthes alba</i>) seed oil | Saccharomyces lysate extract |
| | Melaleuca hypericifolia extract | Saccharomyces/soy protein ferment |
| | Methylsilanol elastinate, M. mannuronate | Safflower (<i>Carthamus tinctorius</i>) oil |
| | Milk amino acids | Selenium aspartate, S. protein complex |
| 25 | Mineral oil (<i>Paraffinum liquidum</i>) | Sericin |
| | Molybdenum aspartate | Serum albumin |
| | Mouriri apiranga extract | Sesame (<i>Sesamum indicum</i>) oil |
| | Natto gum | Shea butter (<i>Butyrospermum parkii</i>) |
| | Nelumbium speciosum extract | Shea butter (<i>Butyrospermum parkii</i>) extract |
| 30 | Neopentyl glycol dicaprate | Shorea stenoptera butter |
| | Oat (<i>Avena sativa</i>) protein | Silk amino acids |
| | Octyl hydroxystearate | Sodium carboxymethyl beta-glucan |
| | Ophiopogon japonicus extract | Sodium chondroitin sulfate |
| | Orange (<i>Citrus aurantium dulcis</i>) peel wax | Sodium DNA, S. hyaluronate |
| 35 | Palmetto extract | Sodium lactate, S. PCA |
| | Pantethine | Soube collagen |
| | Panthenyl ethyl ether | Soube transgenic elastin |
| | Paraffin | Soybean (<i>Glycine soja</i>) oil |
| | Partially hydrogenated soybean oil | Spherical cellulose acetate |
| 40 | peanut (<i>Arachis hypogaea</i>) oil | Spondias amara extract |
| | Pecan (<i>Carya illinoensis</i>) oil | Squalene |
| | PEG-4, -6, -8, -12 | Stomach extract |
| | PEG-70 mango glycerides | Sunflower (<i>Helianthus annuus</i>) seed oil |
| | PEG-75 shea butter glycerides | Superoxide dismutase |
| 45 | PEG-75 shorea butter glycerides | Tissue extract |
| | PEG-100 stearate | Tocopheryl acetate, T. linoleate |
| | Pentaerythrityl | Tomato (<i>Solanum lycopersicum</i>) extract |
| | isostearate/caprate/caprylate/adipate | Tormentil (<i>Potentilla erecta</i>) extract |
| | Pentaerythrityl stearate/caprate/caprylate/adipate | Trehalose |
| 50 | Pentylene glycol | Triundecanoin |
| | Perfluoropolymethylisopropyl ether | Vegetable oil |
| | Petrolatum | Walnut (<i>Juglans regia</i>) oil |
| | Petroleum wax | Watercress (<i>Nasturtium officinale</i>) extract |

	Wheat (<i>Triticum vulgare</i>) germ extract, germ oil	Glycol distearate, G. stearate
	Yarrow (<i>Achillea millefolium</i>) extract	Magnesium myristate
	Wheat amino acids	PEG-2 distearate, P. stearate
	Yeast (<i>Saccharomyces cerevisiae</i>) extract (Faex)	PEG-2 stearate SE
5	Yogurt filtrate	PEG-3 distearate
	Zinc aspartate	Propylene glycol myristate, P.g. stearate
	Ziziphus jujuba extract	Stearamide
		Stearamide DIBA-stearate
		Stearamide MEA
		Stearamide MEA-stearate
		Stearamidopropyl dimethylamine lactate
		Stearyl stearate
		Styrene homopolymer
		Styrene/acrylates copolymer
		Styrene/PVP copolymer
		Triisostearin PEG-6 esters
	Naturilizer	
10	2-Aminobutanol	
	Aminoethyl propanediol	
	Aminomethyl propanediol	
	Aminomethyl propanol	
	Ammonium carbonate	
15	Calcium hydroxide	
	Diethanolamine	
	Ethanolamine	
	Glucamine	
	Isopropanolamine	
20	Isopropylamine	
	2-Methyl-4-hydroxypyrrolidine	
	Morpholine	
	Sodium bromate	
	Succinic acid	
25	Tetrahydroxypropyl ethylenediamine	
	Triethanolamine	
	Tromethamine	
	Oil absorbent	
30	Hydrated silica	
	Polymethyl methacrylate	
	Silicon dioxide hydrate	
	Walnut (<i>Juglans regia</i>) shell powder	
	Ointment base	
35	Borage (<i>Borago officinalis</i>) seed oil	
	Caprylic/capric/stearic triglyceride	
	Glyceryl cocoate	
	Hydrogenated coco-glycerides	
40	Lanolin	
	Mink oil	
	Oleostearine	
	Tallow	
45	Opacifier	
	Barium sulfate	
	C12-16 alcohols	
	Cetearyl octanoate	
	Cetyl myristate, C. palmitate	
50	Cocamidopropyl lauryl ether	
	Glyceryl distearate	
	Glyceryl hydroxystearate	
	Glyceryl myristate, G. stearate	
		Acetyl tributyl citrate
		Acetyl triethyl citrate
		AMP-isostearoyl hydrolyzed wheat protein
		AMPD-isostearoyl hydrolyzed collagen
		Cyclohexane dimethanol dibenzoate
		Dibutyl phthalate
		Diethyl phthalate
		Diethylene glycol dibenzoate
		Diisopropyl sebacate
		Dimethicone copolyol
		Dimethyl phthalate
		Dipropylene glycol dibenzoate
		Ethyl ester of hydrolyzed keratin
		Glycerol tribenzoate
		Glycol
		Hydrolyzed serum protein
		Isocetyl salicylate
		Isodecyl benzoate
		Isoeicosane
		Isopropyl lanolate
		Isostearoyl hydrolyzed collagen
		Lauroyl hydrolyzed collagen
		Marine collagen
		Monostearyl citrate
		Neopentyl glycol dibenzoate
		Octyl benzoate, O. laurate
		PEG-60 shea butter glycerides
		Pentaerythrityl tetrabenzoate
		Polyoxyethylene glycol dibenzoate
		Polypropylene glycol dibenzoate
		PPG-12-PEG-50 lanolin
		PPG-20 cetyl ether
		PPG-20 lanolin alcohol ether
		Propylene glycol dibenzoate
		Propylene glycol myristyl ether acetate

	Rice (<i>Oryza sativa</i>) bran wax	Ethylene/VA copolymer
	Serum protein	Glycereth-26 phosphate
	Tosylamide/epoxy resin	Hyaluronic acid
	Triacetin	Hydrolyzed RNA
5	Tributyl citrate	Hydrolyzed wheat protein polysiloxane polymer
	Triethyl citrate	Hydroxypropyltrimonium hydrolyzed collagen
	Trimethyl pentanediol dibenzoate	Hydroxypropyltrimonium hydrolyzed wheat protein
	Trimethylethanetribenzoate	Laneth-40
10	Polish	Lauryldimonium hydroxypropyl hydrolyzed soy protein
	Acrylates copolymer	Methacrylol ethyl betaine/acrylates copolymer
	Aluminum silicate	Octylacrylamide/acrylates/butylaminoethyl methacrylate copolymer
	Neatsfoot oil	Oleth-2 phosphate
	Tallow	Oleth-5 phosphate
15	Polymer	PEG-3 lanolate
	Acrylamide sodium acrylate copolymer	PEG-4 stearate
	Acrylates-VA crosspolymer	PEG-5M
	Acrylates/acrylamide copolymer	PEG-7 glyceryl cocoate
20	Acrylates/hydroxyesters acrylates copolymer	PEG-8 glyceryl laurate
	Acrylates/octylacrylamide copolymer	PEG-8/SMDI copolymer
	Acrylates/steareth-20 methacrylate copolymer	PEG-9 castor oil
	Adipic acid-epoxypropyl diethylenetriamine copolymer	PEG-9M
25	Adipic acid/dimethylaminohydroxypropyl diethylene triamine copolymer	PEG-11 babassu glycerides
	Ammonium acrylates copolymer	PEG-12 palm kernel glycerides
	Ammonium acrylates/acrylonitrogens copolymer	PEG-12 stearate
	AMP-acrylates copolymer	PEG-14 avocado glycerides
30	AMP-isostearoyl hydrolyzed collagen	PEG-15 glyceryl laurate
	Butylester of PVM-MA copolymer	PEG-20 corn glycerides
	Calcium carrageenan	PEG-20 evening primrose glycerides
	Carboxylated vinylacetate terpolymer	PEG-20 glyceryl oleate
	Cetareth-2 phosphate	PEG-23 oleate
35	Cetareth-5 phosphate	PEG-23M
	Cetareth-10 phosphate	PEG-29 castor oil
	Cetareth-29, -34	PEG-42 babassu glycerides
	Coco-glucoside	PEG-45 safflower glycerides
	Cocodimonium hydroxypropyloxyethyl cellulose	PEG-45M
40	C12-13 pareth-4, -9, -23	PEG-60 evening primrose glycerides
	DEA-cetareth-2-phosphate	PEG-60 hydrogenated castor oil
	DEA-oleth-5-phosphate	PEG-75 castor oil
	DEA-oleth-20-phosphate	PEG-90M
	Diglycol/CHDM/isophthalates/SIP copolymer	PEG-120 distearate
45	Diisopropyl dimer dilinoleate	PEG-150 lanolin
	Diisostearoyl trimethylolpropane siloxy silicate	PEG-160M
	Diisostearyl dimer dilinoleate	PG-hydroxycellulose lauryldimonium chloride
	Dilinoleic acid	PG-hydroxyethylcellulose cocodimonium chloride
	Dodecanedioic acid/cetearyl alcohol/glycol copolymer	PG-hydroxyethylcellulose stearyldimonium chloride
50	Eclipta alba extract	Polyethylene, ionomer
	Ethyl ester of PVM/MA copolymer	Polyethylene, micronized
	Ethylene/acrylic acid copolymer	Polyethylene, oxidized
		Polyglyceryl-2 polyhydroxystearate

	Polymethacrylamidopropyltrimonium chloride	Tapioca dextrin
	Polyquaternium-6, -7, -10, -11, -22, -39	Zinc laurate
	Polysilicone-8	
	Potassium alginate	<u>Powder, absorbent</u>
5	Potassium lauroyl collagen amino acids	Aluminum starch octenylsuccinate
	Potassium lauroyl hydrolyzed soy protein	Clays (white, yellow, red, green, pink)
	Potassium lauroyl wheat amino acids	Sorbitol
	PPG-8/SMDI copolymer	Tapioca
	PPG-12/SMDI copolymer	
10	PPG-51/SMDI copolymer	<u>Preservative</u>
	PVM/MA decadiene crosspolymer	Alcohol
	PVP/dimethylaminoethylmethacrylate copolymer	Ascorbic acid
	PVP/VA copolymer	Ascorbyl palmitate
	Sodium cocoyl hydrolyzed wheat protein	Benzalkonium chloride
15	Stearimonium hydroxypropyl hydrolyzed wheat protein	Benzethonium chloride
	Steareth-2 phosphate	Benzoic acid
	TEA-acrylates/acrylonitrogens copolymer	Benzyl alcohol
	Tosylamide/epoxy resin	Benzylparaben
20	Tosylamide/formaldehyde resin	5-Bromo-5 nitro-1,3-dioxane
	Trideceth-5, -6, -7, -8	2-Bromo-2-nitropropane-1,2-diol
	VA/butyl maleate/isobornyl acrylate copolymer	Butylparaben
	VA/crotonates/vinyl neodecanoate copolymer	Calcium propionate
	Vinyl caprolactam/PVP/	Cetrimonium bromide
25	dimethylaminoethylmethacrylate copolymer	Cetyl pyridinium chloride
	Wheat (Triticum vulgare) protein	Chloroxylonol
	Xanthan gum	Chlorphenesin
		o-Cymen-5-ol
		Diazolindinyl urea
30	<u>Powder</u>	Dichlorobenzyl alcohol
	Acrylates copolymer, spherical powder	Dichlorophene
	Attapulgate	Diiodomethyltolylsulfone
	Boron nitride	Dimethyl hydroxymethyl pyrazole
	Calcium aluminum borosilicate	Dimethyl oxazolidine
	Calcium carbonate	Disodium EDTA
35	Cellulose triacetate	DMDM hydantoin
	Corn (Zea mays) cob powder, starch	EDTA
	Hydrogenated jojoba wax	Erythoribic acid
	Magnesium carbonate, M. myristate	7-Ethylbicyclooxazolidine
	Magnesium stearate	Ethylparaben
40	Mica	Fomistopsis officinalis oil
	Microcrystalline cellulose	Formaldehyde
	Nylon-6	Glutaral
	Nylon powder	Glyeryl laurate
	Oat (Avena sativa) starch	HEDTA
45	Polyamide 12	Hexamidine diisethionate
	Polyethylene	Hexetidine
	Polymethyl methacrylate	Imidazolidinyl urea
	Polymethylsilsesquioxane	Isobutylparaben
	PTFE	Isopropyl sorbate
50	Silica	Isopropylparaben
	Silk powder	MDM hydantoin
	Spherical cellulose acetate	Methenammmonium chloride
	Talc	Methyl paraben sodium

	Methylchloroisothiazolinone	Cocodimonium hydroxypropyl hydrolyzed wheat protein
	Methyldibromo glutaronitrile	Cocoyl hydrolyzed collagen
	Methylisothiazolinone	Collagen, C. phthalate
	Methylparaben	Collagen amino-polysiloxane hydrolyzate
5	Mushroom (<i>Cordyceps sabolifera</i>) extract	Deoxyribonucleic acid
	Myrtrimonium bromide	Desamido collagen
	Pentasodium pentetate	Elastin amino acids
	Pentetic acid	Embryo extract
10	Phenethyl alcohol	Ethyl ester of hydrolyzed animal protein
	Phenol	Fibronectin
	Phenyl mercuric acetate	Gelatin
	o-Phenylphenol	Human placental protein
	Polyaminopropyl biguanide	Hydrolyzed collagen
	Polymethoxy bicyclic oxazolidine	Hydrolyzed extensin
15	Potassium sorbate	Hydrolyzed fish protein
	Propylparaben	Hydrolyzed hemoglobin
	Quaternium-15	Hydrolyzed keratin
	Salicylic acid	Hydrolyzed lactalbumin
20	Sodium benzoate, S. bisulfate	Hydrolyzed milk protein
	Sodium butylparaben, S. dehydroacetate	Hydrolyzed soy flour
	Sodium erythorbate, S. ethyl paraben	Hydrolyzed sweet almond protein
	Sodium hydroxymethylglycinate	Hydroxypropyltrimonium hydrolyzed collagen
	Sodium metabisulfite, S. methylparaben	Isostearoyl hydrolyzed collagen
	Sodium o-phenylphenate	Keratin
25	Sodium propionate, S. propylparaben	Lactoferrin
	Sodium pyrithione, S. salicylate	Lactoglobulin
	Sodium sulfite	Lauryldimonium hydroxypropyl hydrolyzed collagen
	Sorbic acid	Marine collagen
	Tetrasodium EDTA	Methylsilanol elastinate
30	Thimerosal	Potassium abietoyl hydrolyzed collagen
	Thymol	Potassium cocoyl hydrolyzed collagen
	Tris (hydroxymethyl) nitromethane	Potassium myristoyl hydrolyzed collagen
	Trisodium EDTA, T. HEDTA	Potassium oleoyl hydrolyzed collagen
	Usnic acid	Potassium undecylenoyl hydrolyzed collagen
35	Zinc PCA	Propyltrimonium hydrolyzed collagen
	Propellant	Propyltrimonium hydrolyzed soy protein
	Butane	Propyltrimonium hydrolyzed wheat protein
	Dimethyl ether	Protein hydrolysates
40	Hydrofluorocarbon 152a	Quaternium-79 hydrolyzed keratin
	Isobutane	Quaternium-79 hydrolyzed silk
	Propane	Rice peptide
	Protein	RNA
45	Albumen	Serum albumin, S. protein
	Atelocollagen	Silk powder
	Bletia hyacinthina extract	Sodium caseinate
	Chrysanthemum morifolium extract	Sodium cocoyl hydrolyzed collagen
50	Cocodimonium hydroxypropyl hydrolyzed collagen	Sodium cocoyl hydrolyzed soy protein
	Cocodimonium hydroxypropyl hydrolyzed keratin	Sodium myristoyl hydrolyzed collagen
	Cocodimonium hydroxypropyl hydrolyzed soy protein	Sodium oleoyl hydrolyzed collagen
		Sodium stearoyl hydrolyzed collagen
		Sodium undecylenoyl hydrolyzed collagen

- Sodium/TEA-lauroyl hydrolyzed collagen
 Sodium/TEA-lauroyl hydrolyzed keratin
 Soluble collagen
 Soluble keratin
 5 Soluble wheat protein
 Soy (Glycine soja) protein
 Steardimonium hydroxypropyl hydrolyzed collagen
 Steartrimonium hydroxyethyl hydrolyzed collagen
 10 TEA-cocoyl hydrolyzed collagen
 TEA-cocoyl hydrolyzed soy protein
 TEA-lauroyl collagen amino acids
 TEA-lauroyl keratin amino acids
 Trachea hydrolysate
 15 Triethonium hydrolyzed collagen ethosulfate
 Wheat (Triticum vulgare) germ extract, protein
 Wheat amino acids
 Wheat peptide
 Wheat protein
 20 **Protein, hydrolyzed**
 Ethyl ester of hydrolyzed silk
 Hydrolyzed casein
 Hydrolyzed elastin
 25 Hydrolyzed mushroom (Tricholoma matsutake) extract
 Hydrolyzed pea protein
 hydrolyzed rice protein
 Hydrolyzed serum protein
 30 Hydrolyzed silk
 Hydrolyzed soy protein
 Hydrolyzed vegetable protein
 Hydrolyzed wheat protein
 Hydroxypropyltrimonium hydrolyzed casein
 35 Hydroxypropyltrimonium hydrolyzed silk
 Hydroxypropyltrimonium hydrolyzed soy protein
 Hydroxypropyltrimonium hydrolyzed wheat protein
 40 **Reducing agent**
 Dimyrystyl thiodipropionate
 Hydrolyzed zein, iodized
 Hydrolyzed zein, sulfurized
 Zinc formaldehyde sulfoxylate
 45 **Refatting agent**
 Caprylic/capric triglyceride PEG-4 esters
 Cocamide MIPA
 Diisostearyl dimer dilinoleate
 50 Hydrogenated palm kernel glycerides
 Isostearyl erucate, I. isostearate
 Lecithin
 Liposomes
 Magnesium sulfate hepta-hydrate
 Octyldodecyl behenate, O. myristate
 bis-Octyldodecyl stearoyl dimer dilinoleate
 Octyldodecyl stearoyl stearate
 Octyl hydroxystearate
 PEG-3 stearate
 PEG-4 oleamide
 PEG-6 capric/caprylic glycerides
 PEG-7 glyceryl cocoate
 PEG-16
 Propylene glycol dipelargonate
Resin
 Acrylates/hydroxyesters acrylates copolymer
 Ethylene vinyl acetate
 Glyceryl abietate
 Methacrylol ethyl betaine/acrylates copolymer
 4-Methyl benzenesulfonamide
 Polypropylene
 Polyquaternium-16, -44
 Sucrose benzoate
Sequestrant
 Calcium acetate, C. phosphate, C. sulfate
 Encapsulation and entrapment systems
 Pentasodium triphosphate
 Phosphoric acid
 Potassium phosphate, P. sodium tartrate
 Silicon dioxide hydrate
 Sodium citrate, S. gluconate
 Sorbitol
 Tartaric acid
 Tripotassium EDTA
 Trisodium NTA
Silicone
 Amino bispropyl dimethicone
 Ammonium dimethicone copolyol sulfate
 Amodimethicone
 Behenoxy dimethicone
 C16-18 alkyl methicone
 Cetyl dimethicone copolyol
 Cyclomethicone
 Diisodecyl adipate
 Diisostearyl trimethylolpropane siloxy silicate
 Dimethicone
 Dimethicone copolyol
 Dimethicone copolyol almondate
 Dimethicone copolyol isostearate
 Dimethicone copolyol olivate, D.c. phthalate
 Dimethicone copolyolamine
 Dimethiconol fluoroalcohol dilinoleic acid
 Dimethiconol hydroxystearate, D. stearate

	Diphenyl dimethicone	Gelatin
	Disodium-PG-propyldimethicone thiosulfate	Ginseng hydroxypropyltrimonium chloride
	Isopropyl hydroxybutyramide dimethicone	butylene glycol
	copolyol	Glycolipids
5	Methicone	Glycosphingolipids
	Octamethyl cyclotetrasiloxane	Gnetum amazonicum extract
	Phenyl methicone, P. trimethicone	Honey (Mel)
	Polyether Trisiloxane	Hydrolyzed carbolipoprotein
	Polymethylsilsequioxane	Hydrolyzed elastin
10	Polysilicone-8	Hydrolyzed pea protein
	Quaternium-80	Hydrolyzed rice protein
	Silicone quaternium-1, -8	Hydrolyzed serum protein
	Sodium-PG-propyl thiosulfate dimethicone	Hydrolyzed silk
	Stearoxymethicone/dimethicone copolymer	Hydrolyzed soy protein
15	Trimethylsilylamodimethicone	Hydrolyzed vegetable protein
	<u>Skin calming agent</u>	Hydrolyzed wheat protein
	Cornflower (Centaurea cyanus) extract	Inga edulis extract
	Fennel (Foeniculum vulgare) extract	Kiwi (Actinidia chinensis) fruit extract
20	Fenugreek extract	Laminaria japonica extract
	Linden (Tilia cordata) extract	Lecithin
	Valerian (Valeriana officinalis) extract	Marsilea minuta extract
	<u>Skin cleanser</u>	Nettle (Urtica dioica) extract
25	Dog rose (Rosa canina) hips extract	Palmitamidodecanediol
	Papaya (Carica papaya) extract	Pearls (Margarita margarita)
	Peach (Prunus persica) extract	PEG-42 Ebiriko ceramides extract
	Rose (Rosa multiflora) extract	Phenyl trimethicone
	Willow (Salix alba) extract	Phytantriol
30	<u>Skin conditioner</u>	Polygonum multiflorum extract
	Artemisia apiacea extract	Potassium cocoyl hydrolyzed collagen
	Astrocaryum tucuma extract	Retinyl palmitate polypeptide
	Bactris gasipaes extract	Salvia multiorrhiza extract
35	Biotin	Silt
	Bishydroxyethyl biscetyl malonamide	Sodium cocoyl hydrolyzed collagen
	Bletia hyacinthina extract	Soluble transgenic elastin
	Borage (Borago officinalis) seed oil	Steartrimonium hydroxyethyl hydrolyzed collagen
	Borageamidopropyl phosphatidyl PG-dimonium	Stearyl methicone
40	chloride	<u>Skin healing</u>
	Carbocysteine	Calendula officinalis extract
	Catalpa kaempfera extract	Glycoproteins
	Coco phosphatidyl PG-dimonium chloride	Hydrocotyl (Centella asiatica) extract
45	Cocodimonium hydroxypropyl hydrolyzed keratin	Oat (Avena sativa) extract
	Collagen amino acids	Sandalwood (Santalum album) extract
	Cyclomethicone	Spearmint (Mentha viridis) extract
	Dimethicone, D. copolyol acetate	<u>Skin lightening/whitening agent</u>
	Emblica officinalis extract	Ascorbic acid polypeptide
	Equisetum arvense extract	Bearberry (Arctostaphylos uva-ursi) extract
50	Ethyl ester of hydrolyzed animal protein	Hydroquinone-beta-D-glucopyranoside
	Evening primrose (Oenothera biennis) oil	Lemon (Citrus medica limonum peel extract
	Fomes fometarius extract	Pearls (Margarita margarita)
	Fomistopsis officinalis oil	

Skin protectant

- | | | |
|----|--|---|
| | Acetylmethionyl methylsilanol elastinate | Isodecyl salicylate |
| | Allantoin, A. aluminum hydroxide | Jobba (Buxus chinensis) oil |
| | Aloe barbadensis, A.b. extract | Lady's Thistle (Silybum marianum) extract |
| 5 | Aluminum starch octenylsuccinate | Laminaria japonica extract |
| | Anise (Pimpinella anisum) extract | Ligusticum jeholense extract |
| | Arnica montana extract | Liposomes |
| | Artemisia apiacea extract | Magnolis spp. extract |
| | Ascorbyl methylsilanol pectinate | Mango kernel oil |
| 10 | Astrocaryum tucuma extract | marislea minuta extract |
| | Bactris gasipaes extract | Melaleuca hypericifolia extract |
| | Betaglucan | Melaleuca uncinata extract |
| | Bishydroxyethyl biscetyl malonamide | Melaleuca wilsonii extract |
| | Bletia hyacinthina extract | Methylsilanol tri PEG-8 glyceryl cocoate |
| 15 | C18-70 Isoparaffin | Oat (Avena stiva) meal |
| | Calendula amurensis extract | Oyster (Ostrea) shell extract |
| | Carboxymethyl chitin | Palmitamidodecanediol |
| | Carcinia cambogia extract | Pearls (Margarita margarita) |
| | Carrot (Daucus carota) extract | Pentahydrosqualene |
| 20 | Carrot (Daucus carota sativa) oil | Perfluorodecalin |
| | Catalpa kaempferia extract | Perfluoropolymethylisopropyl ether |
| | Chenopodium album extract | Petrolatum |
| | Chitosan | PEG-8/SMDI copolymer |
| | Chrysanthemum morifolium extract | PEG-42 Eburico ceramides extract |
| 25 | Collagen | Pfaffia spp. extract |
| | Corn poppy (Papaver rhoeas) extract | Phospholipids |
| | Crataegus cuneata extract | Plankton extract |
| | Crataegus monogina extract | Polygonum multiflorum extract |
| | Cypress (Cupressus sempervirens) extract | Pongamol |
| 30 | Dimethicone | PPG-12/SMDI Copolymer |
| | Dimethiconol fluoroalcohol dilinoleic acid | PPG-51/SMDI Copolymer |
| | Dimethiconol hydroxystearate, D. stearate | Propyltrimonium hydrolyzed collagen |
| | Dimethylsilanol hyaluronate | Quinoa (Chenopodium quinoa) extract, oil |
| | Echitea glauca extract | Salvia miltiorrhiza extract |
| 35 | Embryo extract | Sambucus nigra extract |
| | Entada phaseoloides extract | Shark liver oil |
| | Equisetum arvense extract | Shorea robusta extract |
| | Euphorium fortunei extract | Sodium chondroitin sulfate |
| | Euterpe precatoria extract | Soluble transgenic elastin |
| 40 | Fenugreek extract | Steartrimonium hydroxyethyl hydrolyzed collagen |
| | fomistopsis officinalis oil, F. pinicola extract | Sterculia platanifolia extract |
| | Galla sinensis extract | Superoxide dismutase |
| | Gentian (Gentiana lutea) extract | Trachea hydrolysate |
| | Gleditsia sinensis extract | Wheat (Triticum vulgare) germ extract, protein |
| 45 | Glyceryl ricinoleate | White nettle (Lamium album) extract |
| | Glycolipids | Withania somniferum extract |
| | Hierochloe odorata extract | Xanthozylum bungeanum extract |
| | Hyaluronic acid | Zinc oxide |
| | Hydrogenated lecithin | |
| 50 | Hydrolyzed lupine protein | <u>Skin smoothing agent</u> |
| | Hydrolyzed milk protein | Althea officinalis extract |
| | Hydrolyzed mushroom (Tricholoma matsutake) extract | Coltsfoot (Tussilago farfara) leaf extract |
| | | Comfrey (Symphytum officinale) leaf extract |

	Plantain (<i>Plantago major</i>) extract	Dimethyl octynediol
	Sericin	Dioleth-8 phosphate
	<u>Skin softening</u>	Glycereth-7 -26
5	Clays (white, yellow, red, green, pink)	Glyceryl caprylate, G. dilaurate
	Cucumber (<i>Cucumis sativus</i>) extract	Glyceryl caprylate/caprates
	Kelp (<i>Macrocystis pyrifera</i>) extract	Isoeicosane
	Peach (<i>Prunus perisca</i>) extract	Isopropanolamine
	Phenethyl dimethicone	Isosteareth-20
10	<u>Skin soothing</u>	Laneth-5, -15
	Calendula officinalis extract	Laureth-23
	Cherry bark extract	Methylated cyclodextrin
	Cucumber (<i>Cucumis sativus</i>) extract	Myreth-3
15	Garlic (<i>Allium sativum</i>) extract	Myreth-3-octanoate
	Hyssop (<i>Hyssopus officinalis</i>) extract	Nonoxynol-10, -12, -14, -40, -50
	Jasmine (<i>Jasminum officinale</i>) extract	Octoxynol-11, -40
	Kelp (<i>Macrocystis pyrifera</i>) extract	Oleoamphohydroxypropylsulfonate
	Mango kernel oil	Oleth-3, -5, -10, -15, -20, -25, -50
20	Meadowsweet (<i>Spiraea ulmaria</i>) extract	Oleth-20 phosphate
	Quince (<i>Pyrus cydonia</i>) seed extract	PEG-4, -6, -8, -12, -16, -20, -32, -40
	Slippery elm extract	PEG-4 dilaurate
	Valerian (<i>Valeriana officinalis</i>) extract	PEG-6 capric/caprylic glycerides
	Willow (<i>Salix alba</i>) extract	PEG-6 methyl ether
25	Witch hazel (<i>Hamamelis virginiana</i>) extract	PEG-8 distearate
		PEG-12 laurate
		PEG-15 castor oil
		PEG-18 stearate
		PEG-20 glyceryl isostearate, P.g. laurate
		PEG-20 glyceryl oleate, P.g. stearate
		PEG-20 methyl glucose sesquisteate
		PEG-20 sorbitan isostearate
		PEG-20 sorbitan triisostearate
		PEG-24 hydrogenated lanolin
		PEG-25 castor oil
		PEG-25 hydrogenated castor oil
		PEG-30 castor oil
		PEG-30 glyceryl cocoate
		PEG-30 glyceryl isostearate
		PEG-30 glyceryl laurate
		PEG-30 glyceryl oleate
		PEG-30 glyceryl stearate
		PEG-33 castor oil
		PEG-35 castor oil
		PEG-36 castor oil
		PEG-40 castor oil
		PEG-40 glyceryl laurate, P.g. stearate
		PEG-40 hydrogenated castor oil
		PEG-40 hydrogenated castor oil PCA isostearate
		PEG-40 sorbitan diisostearate
		PEG-45 palm kernel glycerides
		PEG-48 hydrogenated castor oil
		PEG-50 castor oil
		PEG-50 hydrogenated castor oil
		PEG-60 almond glycerides
	<u>Solubilizer</u>	
	Acetyl monoethanolamine	
30	Almond oil PEG-6 esters	
	2-Aminobutanol	
	Aminoethyl propanediol	
	Aminomethyl propanediol, A. propanol	
	Apricot kernel oil PEG-6 esters	
35	Benzalkonium chloride	
	Butoxydiglycol	
	Butyl glucoside	
	Butylene glycol	
	Butyloctanol	
40	Capric-caprylic mono-diglyceride	
	Capryl caprylylglucoside	
	Caprylic/capric triglyceride	
	Caprylic/capric/linoleic triglyceride	
	Caprylic/capric/oleic triglycerides	
45	Caprylyl/capryl glucoside	
	Cetareth-20	
	Ceteth-10	
	Cetyl PPG-2 isodeceth-7 carboxylate	
	Cholesterol	
50	Corn oil PEG-6 esters	
	Decaglycerol monodiolate	
	Diethanolamine	
	Dilaureth-10 phosphate	

	PEG-60 castor oil	Butyl acetate
	PEG-60 corn glycerides	n-Butyl alcohol
	PEG-60 glyceryl isostearate, P.g. stearate	Butyl myristate, B. stearate
	PEG-60 hydrogenated castor oil	Butylene glycol
5	PEG-60 lanolin	C9-11 isoparaffin
	PEG-70 mango glycerides	C10-11 isoparaffin
	PEG-75 lanolin	C10-13 isoparaffin
	PEG-75 shea butter glycerides	Caprylic alcohol
	PEG-75 shorea butter glycerides	Castor (Ricinus communis) oil
10	PEG-80 hydrogenated castor oil	Cetearyl octanoate
	PEG-80 jojoba acid/alcohol	Cetyl stearyl octanoate
	PEG-80 sorbitan laurate	Chlorobutanol
	PEG-100 castor oil	Decyl alcohol
	PEG-100 hydrogenated castor oil	Diethylene glycol
15	PEG-120 jojoba acid/alcohol	Diethylene glycol dibenzoate
	PEG-200 trihydroxystearin	Diethyl sebacate
	Poloxamer 407	Diisocetyl adipate
	Polyglyceryl-3 oleate	Diisopropyl adipate, D. sebacate
	Polyglyceryl-6 dioleate	Dimethyl phthalate
20	Polyglyceryl-10 decaoleate, P. tetraoleate	Dipropylene glycol
	Polysorbate 20, 60, 80	Dipropylene glycol dibenzoate
	PPG-2-isodeceth-4, -6, -9, -12	Ethoxydiglycol
	PPG-3 isosteareth-9	Ethyl acetate, E. lactate
	PPG-3 isoceteth-20 acetate	Ethyl myristate, E. oleate
25	PPG-5-ceteth-10 phosphate	2-Ethylhexyl isostearate
	PPG-5-ceteth-20	Glycerin
	PPG-6-decyltetradeceth-12, -20, -30	Glycofurol
	PPG-12-PEG-65 lanolin oil	Heptane
	PPG-15 stearyl ether	Hexyl alcohol
30	PPG-18 butyl ether	Hexylene glycol
	PPG-24 butyl ether	Isobutyl stearate
	PPG-26-buteth-26	Isocetyl salicylate
	PPG-33 butyl ether	Isodecyl benzoate, I. isononanoate
	PPG-33-buteth-45	Isodecyl octanoate, I. oleate
35	PPG-40-PEG-60 lanolin oil	Isododecane
	PPG-50 cetyl ether	Isoeicosane
	Propylene glycol dicaprylate,	Isohexadecane
	dicaprylate/dicaprate	Isopropyl alcohol, I. myristate
	Ricinoleamide DEA	Isostearyl stearyl stearate
40	Ricinoleth-40	Laureth-2 acetate
	Sodium alpha olefin sulfonate	Methoxydiglycol
	Sodium lauryl sulfate	Methoxyisopropanol
	Sodium methylnaphthalenesulfonate	Methyl alcohol
	Triethanolamine	Methyl propanediol
45	Trioctanoin	Methylene chloride
	Tromethamine	MEK
	Solvent	MIBK
	Acetic acid	Morpholine
50	Acetone	Octyl benzoate, O. isononanoate
	Alcohol, A. denat	Octyl laurate, O. palmitate
	Benzophenone	Octyldodecyl lactate
	Butoxydiglycol	Olive oil PEG-6 esters
		Peanut oil PEG-6 esters

	Pentane	Hydroxyoctacosanyl hydroxystearate
	Petroleum distillates	Karaya (<i>Sterculia urens</i>) gum
	PEG-6 methyl ether	Laureth-3
	PEG-12	Maltitol
5	PEG-20 hydrogenated castor oil	Methylated cyclodextrin
	PEG-33 castor oil	Oleamide
	PEG-50 glyceryl cocoate	PEG-40 stearate
	Polyglyceryl-2 dioleate	PEG-40/dodecyl glycol copolymer
	Polyglyceryl-3 diisostearate	Perfluoropolymethylisopropyl ether
10	Polyoxyethylene glycol dibenzoate	Polyethylene paste
	Polypropylene glycol dibenzoate	PPG-5 lanolin wax
	PPG-2 myristyl ether propionate	PPG-7-buteth-10
	PPG-3	PPG-10 cetyl ether phosphate
	PPG-20 lanolin alcohol ether	Propylene carbonate, P. glycol alginate
15	Propyl alcohol	PVM/MA decadiene crosspolymer
	Propylene carbonate	Sodium acrylates/vinyl isodecanoate crosspolymer
	Propylene glycol	Sodium carbomer
	Propylene glycol dibenzoate	Sorbitan laurate
	Propylene glycol methyl ether	Stearic hydrazide
20	Propylene glycol myristate	2,2',4,4'-Tetrahydroxybenzophenone
	Pyridine	Tricaprin
	Sesame (<i>Sesamum indicum</i>) oil	Tricaprylin
	Stearyl heptanoate	Trilaurin
	Toluene	Trimyristin
25	Xylene	Tripalmitin
		Tristearin
	<u>SPF booster</u>	
	Borjoa sorbilis extract	<u>Stimulant</u>
	Isohexadecyl salicylate	Capsicum frutescens extract
30	Styrene/acrylates copolymer	Eleuthero ginseng (<i>Acanthopanax senticosus</i>) extract
	Titanium dioxide	Guarana (<i>Paullinia cupana</i>) extract
	Yeast (<i>Saccharomyces cerevisiae</i>) extract (Faex)	Lactococcus hydrolysate
		Methylsilanol elastinate
	<u>Stabilizer</u>	Methylsilanol hydroxyproline aspartate
35	Acrylates-VA crosspolymer	TEA-hydroiodide
	Acrylates/ceteth-20 methacrylates copolymer	Tocopheryl nicotinate
	Acrylates/steareth-20 methacrylate copolymer	Urocanic acid
	Acrylates/vinyl isodecanoate crosspolymer	Yeast (<i>Saccharomyces cerevisiae</i>) extract (Faex)
	Alkyldimethylamine oxide	Zedoary (<i>Curcuma zedoaria</i>) oil
40	C10 polycarbamyl polyglycol ester	Zinc DNA
	Calcium alginate	
	Cocamidopropyl dimethylamine lactate	<u>Sunscreen</u>
	Cocamine oxide	Basil (<i>Basilicum santum</i>) oil extract
	Colloidal silica sols	Basil (<i>Ocimum basilicum</i>) extract
45	Cyclodextrin	Benzophenone-3 -4
	Disodium EDTA	3-Benzylidene camphor
	Gellan gum	Borjoa sorbilis extract
	Glyceryl diisostearate, G. stearate SE	C12-15 alkyl benzoate
	Glyceryl mono-di-tri-caprylate	Coffee (<i>Coffea arabica</i>) bean extract
50	Hydrogenated coco-glycerides	Ethyl salicylate
	Hydrogenated C12-18 triglycerides	Glyceryl PABA
	Hydrogenated tallow glycerides	Homosalate
	Hydrolyzed oat flour	

	Hydroquinone-beta-D-glucopyranoside	Cocamidopropyl betaine, potassium salt
	Isoamyl p-methoxycinnamate	Cocamidopropyl betaine ammonium salt
	Isopropylbenzyl salicylate	Cocamidopropyl hydroxy sultaine
	Job's tears (Coix lacryma-jobi) extract	Cocamidopropyl hydroxy sultaine, ammonium salt
5	Menthyl anthranilate	Cocamidopropyl hydroxy sultaine, potassium salt
	Octyl dimethyl PABA, O. methoxycinnamate	Cocamidopropylamine oxide
	Octyl salicylate, O. triazone	Coceth-7 carboxylic acid
	Oryzanol	Coco-glucoside
	Pansy (Viola tricolor) extract	Cocoamphodiacetate lauryl-laureth sulfate
10	PEG-25 PABA	Cocoamphodiacetate lauryl sulfate
	Phenylbenzimidazole sulfonic acid	Cocoamphodiacetate trideceth sulfate
	Rice (Oryza sativa) bran oil	Coco phosphatidyl PG-dimonium chloride
	TEA-salicylate	N-Cocoyl-(3-amidopropyl)-N,N-dimethyl-N-ethyl ammonium ethyl sulfate
15	Titanium dioxide	Cocoyl glutamic acid
	Sunscreen UVB	Cocoyl hydrolyzed soy protein
	Benzophenone-5	Cocoyl hydroxyethyl imidazoline
	Eclipta alba extract	C11-15 pareth-9, -12, -20, -30, -40
	PEG-25 PABA	C12-13 pareth sulfate
20	Steareth-100	C12-13 pareth-5 carboxylic acid
	Tridecyl salicylate	C12-15 pareth-12
	Superfating agent	C14-15 pareth-8 carboxylic acid
	Linoleamide DEA	DEA-oleth-5-phosphate
25	PEG-20 almond glycerides	DEA-oleth-20-phosphate
	PEG-60 lanolin	Deceth-3, -6, -8
	PEG-75 lanolin	Decyltetradeceth-25
	Surfactant	Diceteareth-10 phosphoric acid
30	Alkyl dimethyl betaine	Dimethicone copolyol
	Alkyldimethylamine oxide	Dimethicone copolyol almondate, D.c. isostearate
	Ammonium cocoyl sarcosinate	Dimethicone copolyol laurate, D.c. olivate
	Ammonium C12-15 alkyl sulfate	Dimethicone copolyol phthalate
	Ammonium dimethicone copolyol sulfate	Dimethicone copolyolamine
35	Ammonium laureth-5 sulfate	Dimethicone propyl PG-betaine
	Ammonium laureth-12 sulfate	Diocylododeceth-2 lauroyl glutamate
	Ammonium laureth sulfate	Diocylododeceth-5 lauroyl glutamate
	Ammonium lauroyl sarcosinate	Diocylododecyl lauroyl glutamate
	Ammonium lauryl sulfate, A.I. sulfosuccinate	Disodium capryloamphodiacetate
40	Ammonium myreth sulfate	Disodium cocoamphodiacetate
	Ammonium nonoxynol 4 sulfate	Disodium hydrogenated tallow glutamate
	Azelamide MEA	Disodium laneth-5 sulfosuccinate
	C20-40 alcohol ethoxylate	Disodium lauramido MEA-sulfosuccinate
	C30-50 alcohol ethoxylate	Disodium laureth sulfosuccinate
45	C40-60 alcohol ethoxylate	Disodium oleamido MIPA-sulfosuccinate
	Calcium dodecylbenzene sulfonate	Disodium oleamido PEG-2 sulfosuccinate
	Calcium laurate	Disodium oleth-3 sulfosuccinate
	Ceteareth-2 phosphate	Disodium ricinoleamido MEA-sulfosuccinate
	Ceteareth-5 phosphate	Disodium tallamido MEA-sulfosuccinate
50	Ceteareth-10 phosphate	Disteareth-2 lauroyl glutamate
	Cetoleth-25	Disteareth-5 lauroyl glutamate
	Cetyl betaine, C. phosphate	Ethoxylated fatty alcohol
	Cocamide MEA ethoxylate	Ethoxylated glycerol sorbitan saturated fatty acid ester

	Ethoxylated glycerol sorbitan unsaturated fatty acid ester	Polysiloxane-polyether copolymer
	Glycereth-25 PCA isostearate	Potassium cocoyl glycinate
	Glycereth-26 phosphate	Potassium cocoyl hydrolyzed collagen
5	glyceryl hydroxystearate	Potassium C9-15 phosphate ester
	Hydrogenated tallowoyl glutamic acid	Potassium lauroyl hydrolyzed collagen
	Isopropyl hydroxybutyramide dimethicone copolyol	Potassium lauryl sulfate
	Lauramidopropyl betain	Potassium myristoyl hydrolyzed collagen
10	Laureth-1, -2, -3, -4, -7, -12, -16	Potassium oleoyl hydrolyzed collagen
	Laureth-3 carboxylic acid, L. phosphate	Potassium palmitate
	Laureth-5 carboxylic acid	Potassium undecylenoyl hydrolyzed collagen
	Laureth-11 carboxylic acid	PPG-2-isodeceth-4, -6, -9, -12
	Lauroyl sarcosine	PPG-6 C12-18 pareth-11
15	Lauryl dimethylamine cyclocarboxypropylolate	Protein hydrolysates
	Laryl hydroxyethyl imidazoline	Quaternium-80
	Linoleamide DEA	Quillaja saponaria extract
	Magnesium laureth-8 sulfate	Raffinose laurate, R. myristate, R. oleate
	Meroxapol 105, 171, 172	Raffinose palmitate, R. stearate
20	MEA-lauryl sulfate	Ricinoleamidopropyl betain
	Mixed isopropanolamines myristate	Silicone quaternium-1, -8, -9
	Myreth-7	Sodium alpha olefin sulfonate
	Myristoyl sarcosine	Sodium cocoamphoacetate
	Myristyl alcohol	Sodium cocoyl hydrolyzed wheat protein
25	Nonoxynol-7, -9, -13, -15	Sodium cocoyl isethionate
	Nonoxynol-10 carboxylic acid	Sodium C12-13 sulfate
	Octoxynol-10, -12	Sodium C12-14 pareth-2 sulfate
	Octyldodeceth-10, -16	Sodium C12-15 pareth-3 sulfonate
	Oleoyl sarcosine	Sodium C12-15 pareth-7 carboxylate
30	Oleth-2 phosphate	Sodium C12-15 pareth-7 sulfonate
	Oleth-5 phosphate	Sodium C12-15 pareth-8 carboxylate
	Oleyl betaine	Sodium C12-15 pareth-15 sulfonate
	Oleyl hydroxyethyl imidazoline	Sodium C12-18 alkyl sulfate
	Palmitamine oxide	Sodium C13-17 alkane sulfonate
35	Palmityl betaine	Sodium C14-16 olefin sulfonate
	PCA ethyl cocoyl arginate	Sodium cetearyl sulfate
	PEG-7 hydrogenated castor oil	Sodium cetyl oleyl sulfate
	PEG-8 caprylic/capric glycerides	Sodium coco-tallow sulfate
	PEG-8 laurate	Sodium cocoyl glutamate
40	PEG-8 stearate	Sodium cocoyl hydrolyzed collagen
	PEG-15 glyceryl stearate	Sodium cocoyl hydrolyzed soy protein
	PEG-25 glyceryl isostearate	Sodium cocoyl sarcosinate
	PEG-27 lanolin	Sodium dimethicone copolyol acetyl methyltaurate
	PEG-30 lanolin	Sodium hydrogenated tallow glutamate
45	PEG-40 castor oil	Sodium isodecyl sulfate
	PEG-40 glyceryl stearate	Sodium laureth-5 carboxylate
	PEG-40 jojoba oil, P. lanolin	Sodium laureth-11 carboxylate
	PEG-60 glyceryl isostearate, P.g. stearate	Sodium laureth-13-carboxylate
	PEG-80 jojoba oil, P. sorbitan laurate	Sodium laureth sulfate
50	PEG-120 jojoba oil	Sodium lauroamphoacetate
	Pentasodium triphosphate	Sodium lauroyl glutamate
	Poloxamer 101, 122	Sodium lauroyl hydrolyzed collagen
	Polyglyceryl-2 dioleate	Sodium lauroyl sarcosinate, S.l. taurate
		Sodium magnesium laureth sulfate

- Sodium methyl cocoyl taurate
 Sodium methyl oleoyl taurate
 Sodium myristoyl glutamate
 Sodium myristoyl hydrolyzed collagen
 5 Sodium myristoyl sarcosinate
 Sodium myristyl sulfate
 Sodium nonoxynol-6 phosphate
 Sodium octoxynol-2 ethane sulfonate
 Sodium octyl sulfate
 10 Sodium oleoyl hydrolyzed collagen
 Sodium stearoyl hydrolyzed collagen
 Sodium trideceth sulfate
 Sodium undecylenoyl hydrolyzed collagen
 Sodium/TEA-lauroyl hydrolyzed collagen
 15 Sodium/TEA-lauroyl hydrolyzed keratin
 Sorbitan isostearate
 Stearoyl sarcosine
 Sulfated castor oil
 TEA-cocoyl glutamate
 20 TEA-cocoyl hydrolyzed collagen
 TEA-cocoyl hydrolyzed soy protein
 TEA-C12-15 alkyl sulfate
 TEA-hydrogenated tallow glutamate
 TEA-lauroyl glutamate
 25 TEA-lauroyl keratin amino acids
 TEA-lauroyl sarcosinate
 TEA-lauryl sulfate
 TEA-myristoyl hydrolyzed collagen
 Tocophereth-5 -10 -18 -20 -30 -50 -70
 30 Trideceth-7 carboxylic acid
 Trideceth-9
 Trideceth-19-carboxylic acid
 Tridecyl ethoxylate
 Triethanolamine C10-14 sulfate
 35 Trilauryl phosphate
 Wheat germamidopropyl betaine
 Yucca vera extract
- Suspending agent**
- 40 Acrylates/ceteth-20 methacrylates copolymer
 Acrylates/steareth-20 methacrylate copolymer
 Algin
 Bentonite
 C10 polycarbamyl polyglycol ester
 45 Calcium alginate
 Carbomer, C. 934
 Carrageenan (Chondrus crispus)
 Cellulose gum
 Cetyl hydroxyethylcellulose
 50 Dihydrogenated tallow phthalic acid amide
 Distearyl phthalic acid amide
 Guar (Cyanopsis tetragonoloba) gum
 Hectorite
- Hydroxypropylcellulose
 Isobutylene/MA copolymer
 Magnesium aluminum silicate
 Methylcellulose
 Pentasodium triphosphate
 Polyethylene, P. micronized
 Propylene glycol alginate
 Quaternium-18 bentonite
 Quaternium-18 hectorite
 Sodium magnesium silicate
 Sodium polynaphthalenesulfonate
 Stearalkonium bentonite, S. hectorite
 Steareth-10 allyl ether/acrylates copolymer
 _____ (Astragalus gummifer) gum
 _____ ribehenin
 _____ rihydroxystearin
 _____ omethamine magnesium aluminum silicate
 _____ anthan gum
- Sweetener**
- _____ saccharin
 _____ acid
 _____ acid
 _____ ammoniated
 _____ corn starch

 _____ saccharin

- accelerator**
- _____ tyrosine
 Carrot (Daucus carota) extract
 _____ acetyl tyrosinate methylsilanol
 _____ droxyacetone
 _____ malyl tyrosinate
 _____ alba extract in white emulsion
 _____ tyrosinate
- ckener**
- _____ -VA crosspolmer
 _____ /C10-C30 alkyl acrylate crosspolymer
 _____ /ceteth-20 itaconate copolymer
 _____ /ceteth-20 methacrylates copolymer
 _____ /steareth-20 itaconate copolymer
 _____ /steareth-20 methacrylate copolymer
 _____ /steareth-50 acrylate copolymer
 _____ /vinyl isodecanoate crosspolymer
 _____ acid/acrylonitrogens copolymer

		Hydrogenated rapeseed oil
	_____ /magnesium hydroxide stearate	Hydrogenated starch hydrolysate
	_____ acrylates/acrylonitrogens copolymer	Hydrogenated talloweth-60 myristyl glycol
	_____ alginate	Hydrolyzed oat flour
5	_____ alcohol	Hydrolyzed transgenic collagen
	_____ acid	Hydroxyethylcellulose
	_____ alcohol, B. behenate	
	_____ nite	
	_____ olycarbaryl polyglycol ester	
10	_____ 5 alcohols	
	_____ 6 alcohols	
	_____ 6 acid	
	Calcium alginate	
	Calcium carrageenan	
15	Caprylic alcohol	
	Carbomer	
	Carboxymethyl hydroxyethylcellulose	
	Carrageenan (<i>Chondrus crispus</i>)	
	Cellulose, C. gum	
20	Cetearyl alcohol, C. behenate	
	Cetearyl octanoate, C. stearate	
	Cetostearyl stearate	
	Cetyl alcohol	
	Cetyl hydroxyethylcellulose	
25	Cetyl myristate, C. palmitate	
	Cocamide	
	Cocamide MEA, C. MIPA	
	Cocamidopropylamine oxide	
	Coco-betaine	
30	Coco-rapeseedate	
	Coco/oleamidopropyl betaine	
	Cocoyl amido hydroxy sulfo betaine	
	Cocoyl monoethanolamide ethoxylate	
	Colloidal silica sols	
35	DEA-hydrolyzed lecithin	
	DEA-linoleate	
	DEA-oleth-3 phosphate	
	DEA oleth-10 phosphate	
	Decyl alcohol	
40	Dextran	
	Dextrin	
	Dilaureth-10 phosphate	
	Dioleth-8 phosphate	
	DMHF	
45	Ethoxylated fatty alcohol	
	Gellan gum	
	Glyceryl behenate, G. stearate	
	Glyceryl polymethacrylate	
	Guar (<i>Cyanopsis tetragonoloba</i>) gum	
50	Guar hydroxypropyltrimonium chloride	
	Hectorite	
	Hexyl alcohol	
	Hydrated silica	

	Hydroxypropyl chitosan	PEG-100 stearate
	Hydroxypropyl guar	PEG-120 methyl glucose dioleate
	Hydroxypropyl methylcellulose	PEG-150 distearate
	Hydroxypropylcellulose	PEG-150 pentaerythrityl tetrastearate
5	Isoceteth-10	PEG-160M
	Isostearamide DEA	PEG-200 glyceryl stearate
	Isostearamidopropylamine oxide	PEG-200 glyceryl tallowate
	Isostearoamphopropionate	Pentaerythrityl tetrabehenate
	Jojoba wax	Pentaerythrityl tetrastearate
10	Karaya (<i>Sterculia urens</i>) gum	Poloxamer 105, 124, 185, 237, 238, 338, 4
	L _____ DEA, L. MEA, L. MIPA	Polyacrylic acid
	L _____ midopropyl betaine	Polysorbate 20
	Laureth-10	Potassium alginate, P. chloride
	L _____ -linoleic DEA	Potassium oleate, P. stearate
15	L _____ -linoleoyl diethanolamide	PPG-5-ceteth-10 phosphate
	L _____ -myristoyl diethanolamide	Propylene glycol stearate
	L _____ alcohol, L. betaine	PVM/MA decadiene crosspolymer
	L _____ amide DEA, L. MEA	PVP
	L _____ eic acid	Quaternium-18 bentonite
20	L _____ mic acid	Quaternium-18 hectorite
	L _____ bean (<i>Ceratonia siliqua</i>) gum	Rapeseed oil, ethoxylated high erucic acid
	Magnesium aluminum silicate	Ricinoleamide MEA
	MDM hydantoin	Sesamide DEA
	Methylcellulose	Sodium acrylates/vinyl isodecanoate crossp
25	Montmorillonite	Sodium carbomer, S. carrageenan
	Myristamide DEA, M. MEA	Sodium ceteth-13-carboxylate
	Myristamine oxide	Sodium chloride
	Myristyl alcohol	Sodium magnesium silicate, S. stearate
	Octacosanyl stearate	Sorbitan sesquiisostearate, S. tristearate
30	Oleamide, O. DEA, O. MEA	Soyamide DEA
	Palmitamide MEA	Soyamidopropyl betaine
	Pectin	Starch polyacrylonitrile copolymer-potassiu
	PEG-2 laurate	Starch polyacrylonitrile copolymer-sodium
	PEG-3 distearate, P. lauramide	Stearalkonium bentonite, S. hectorite
35	PEG-3 lauramine oxide	Stearamide
	PEG-4 diisostearate, P. oleamide	Stearamide DEA, S. MEA, S. MEA-stearat
	PEG-5M	Stearamidopropyl dimethylamine lactate
	PEG-6 beeswax	Stearamine oxide
	PEG-7 hydrogenated castor oil	Steareth-10 allyl ether/acrylates copolymer
40	PEG-8	Stearic acid
	PEG-8 dioleate, P. distearate	Stearyl alcohol
	PEG-8 stearate	Synthetic beeswax
	PEG-9M	Tallowamide MEA
	PEG-12 beeswax	TEA-acrylates/acrylonitrogens copolymer
45	PEG-18 glyceryl oleate/cocoate	Tragacanth (<i>Astragalus gummifer</i>) gum
	PEG-23M	Tribehenin
	PEG-28 glyceryl tallowate	Trihydroxystearin
	PEG-40 jojoba oil	Tromethamine magnesium aluminum silicate
	PEG-45M	Wheat germamide DEA
50	PEG-50 tallow amide	Wheat germamidopropyl betain
	PEG-55 propylene glycol oleate	Xanthan gum
	PEG-75 stearate	
	PEG-90M	

Thixotrope

- Bentonite
 Hectorite
 Sodium magnesium silicate
 Stearalkonium bentonite
- 5
- Toner**
 Althea officinalis extract
 Clover (Trifolium pratense) extract
 Dog rose (Rosa canina) hips extract
 10 Ginseng (Panax ginseng) extract
 Horsetail extract
 Lemon bioflavonoids extract
 Meadowsweet (Spiraea ulmaria) extract
 Nettle (Urtica dioica) extract
 15 Rose (Rosa multiflora) extract
 Rosemary (Rosmarinus officinalis) extract
- UVA absorber**
 Benzophenone-1, -2, -3, -4, -6, -8, -9, -11, -12
 20 Butyl methoxydibenzoylmethane
 Corallina officinalis
 Isopropyl dibenzoylmethane
 Menthyl anthranilate
 2,2',4,4'-Tetrahydroxybenzophenone
 25 Titanium dioxide
 Zinc oxide
- UVB absorber**
 Argania spinosa oil
 30 Benzophenone-1 -2 -3 -4 -6 -9 -11
 Corallina officinalis
 DEA-methoxycinnamate
 Drometrizole
 Ethyl dihydroxypropyl PABA
 35 Etocrylene
 homosalate
 Isoamyl p-methoxycinnamate
 Isopropyl methoxycinnamate
 Isopropylbenzyl salicylate
 40 4-Methylbenzylidene camphor
 Octocrylene
 Octrizole
 Octyl dimethyl PABA
 Octyl methoxycinnamate
 45 Octyl salicylate, O. triazne
 PABA
 PEG-25 PABA
 Phenylbenzimidazole sulfonic acid
 Shea butter, ethoxylated
 50 TEA-salicylate
 Titanium dioxide
 TriPABA panthenol
 Zinc oxide
- Vegetable oil**
 Apricot (Prunus armeniaca) kernel oil
 Avocado (Persea gratissima) oil
 Baobab oil
 Calendula officinalis oil
 Chaulmoogra (Taraktogenos kurzii) oil
 Coconut (Cocos nucifera) oil
 Corn (Zea mays) oil
 Cottonseed (Gossypium) oil
 Gold of pleasure oil
 Grape (Vitis vinifera) seed oil
 Hazel (Corylus avellana) nut oil
 Hybrid sunflower (Helianthus annuus) oil
 Hydrogenated coconut oil
 Hydrogenated cottonseed oil
 Hydrogenated vegetable oil
 Jojoba (Buxus chinensis) oil
 Kukui (Aleurites molaccana) nut oil
 Macadamia ternifolia nut oil
 Meadowfoam (Limnanthes alba) seed oil
 Mexican poppy oil
 Palm (Elaeis guineensis) kernel oil
 Partially hydrogenated soybean oil
 Peach (Prunus persica) kernel oil
 Peanut (Arachis hypogaea) oil
 Pecan (Carya illinoensis) oil
 Pumpkin (Cucurbita pepo) seed oil
 Quinoa (Chenopodium quinoa) oil
 Rapeseed (Brassica capestris) oil
 Rice (Oryza sativa) bran oil
 Safflower (Carthamus tinctorius) oil
 Seabuckthorn oil
 Sesame (Sesamum indicum) oil
 Sisymbrium irio oil
 Soybean (Glycine soja) oil
 Sunflower (Helianthus annuus) seed oil
 Walnut (Juglans regia) oil
 Wheat (Triticum vulgare) germ oil
 Wild borage oil
- Vitamin**
 Aesculus chinensis extract
 Ascorbic acid
 Ascorbic acid polypeptide
 Ascorbyl palmitate
 Biotin
 Calcium pantothenate
 Cholecalciferol
 Cyanocobalamin
 Eclipta alba extract
 Emblica officinalis extract
 Equisetum arvense extract
 Ergocalciferol

- Esculin
Ethyl linoleate
Folic acid
Laminaria japonica extract
5 Marsilea minuta extract
Melaleuca bracteata extract
Menadione
Nasturtium sinensis extract
Nelumbium speciosum extract
10 Niacin
Niacinamide, N. ascorbate
Nicotinamide
Nicotinic acid
Ocimum basilicum extract
15 Panthenyl triacetate
Pantothenic acid
Phytonadione
Pyridoxine HCl
Retinol
20 Retinyl acetate, R. palmitate
Retinyl palmitate polypeptide
Retinyl propionate
Riboflavin tetraacetate
Sodium ascorbate
25 Thiamine HCL
Tocopherol
Tocopheryl acetate, T. succinate
- Wax**
30 Bayberry (Myrica cerifera) wax
Behenoxy dimethicone
C16-18 alkyl methicone
Candelilla (Euphorbia cerifera) wax
Carnauba (Copernicia cerifera) wax
35 Ceresin
Cetyl dimethicone, C. isooctanoate
Dialkyldimethylpolysiloxane
Dimethiconol hydroxystearate
Dimethiconol stearate
40 Hydrogenated castor oil
Hydrogenated cottonseed oil
Hydrogenated jojoba oil, H.j. wax
Hydrogenated palm kernel oil
Hydrogenated rapeseed oil
45 Hydrogenated rice bran wax
hydrogenated vegetable oil
Isooctadecyl isononanoate
Japan (Rhus succedanea) wax
Jojoba esters
50 Montan (Montan cera) wax
Ouricury wax
Ozokerite
Polyglyceryl-3 beeswax

Spermaceti
Stearoxymethicone/dimethicone copolymer
Stearoxytrimethylsilane
Synthetic candelilla wax
Synthetic carnauba

Wetting agent

Benzalkonium chloride
Benzethonium chloride
Cetalkonium chloride
Cetareth-20
Ceteth-20
Cetyl pyridinium chloride
Cocoamphodipropionic acid
Decaglycerol monodiolate
Deceth-9
Dihydroabietyl methacrylate
Dimethicone copolyol methyl ether
Dimethicone copolyol phthalate
Diocetyl sodium sulfosuccinate
Ethyl hydroxymethyl oleyl oxazoline
Hydroxylated milk glycerides
Isolaureth-6
Lanolin acid
Lauryl pyrrolidone
Lecithin
Methyl hydrogenated rosinate
Methyl rosinate
Nonyl nonoxynol-5
Octoxynol-8, 70
Oleth-15
Oleth-20 phosphate
PEG-9 castor oil
PEG-15 castor oil
PEG-20 glyceryl stearate
PEG-20 sorbitan triisostearate
PEG-45 palm kernel glycerides
PEG-60 almond glycerides, P.corn glycerides
PEG-60 shea butter glycerides
PEG-70 mango glycerides
PEG-75 shorea butter glycerides
PEG-80 sorbitan laurate
Poloxamer 123, 181, 182, 184, 235, 334
Polyether trisiloxane
Polyglyceryl-3 oleate
Polyglyceryl-6 dioleate
Polyglyceryl-10 tetraoleate
Polysorbate 60, 80
PPG-2-isodeceth-4, -6, -9, -12
PPG-10 lanolin alcohol ether
Propylene glycol
Sodium butoxyethoxy acetate
Sodium capryloamphohydroxypropylsulfonate

- Sodium decyl diphenyl ether sulfonate
- Sodium dodecyldiphenyl ether sulfonate
- Sodium lauryl sulfate
- Sulfated castor oil
- 5 Triisocetyl citrate
- Triisostearin PEG-6 esters
- Yucca vera extract

Claims:

1. A cosmetic composition comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscifying polymer network comprising at least one poloxamer component randomly bonded to at least one poly(acrylic acid) component said polymer network capable of aggregation in response to a change in temperature; and
a cosmetically active agent which imparts a preselected cosmetic effect, said carrier and said agent disposed within an aqueous-based medium.
2. A cosmetic composition for topical application, comprising:
a cosmetically acceptable carrier, comprising a reverse thermal viscifying polymer network comprising at least one poloxamer component capable of aggregation in response to a change in temperature randomly bonded to at least one poly(acrylic acid) component; and
a cosmetically active agent selected to treat imperfections or disorders of the skin, said carrier and said agent disposed within an aqueous-based medium.
3. The cosmetic composition of claim 1, wherein the cosmetic composition is a shampoo and the cosmetically active agent comprises a cleansing surfactant.
4. The cosmetic composition of claim 1, wherein the cosmetic composition is a moisturizer and the cosmetically active agent comprises a moisturizer.
5. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunscreen and the cosmetically active agent comprises a UV-absorbing agent.
6. The cosmetic composition of claim 1, wherein the cosmetic composition is an acne cream and the cosmetically active agent comprises an antiacne agent.

7. The cosmetic composition of claim 1, wherein the cosmetic composition is a hair straightener and the cosmetic agent comprises a base for increasing the pH.

8. The cosmetic composition of claim 1, wherein the cosmetic composition is a sunless tanning lotion and the cosmetically active agent comprises skin tinting agent.

9. The cosmetic composition of claim 1, wherein the cosmetic composition is an antiperspirant and the cosmetically active agent comprises aluminum chlorhydrate.

10. The cosmetic composition of claim 1, wherein the cosmetic composition is a shaving cream and the cosmetically active agent comprises an emollient and a foaming surfactant.

11. The cosmetic composition of claim 1, wherein the cosmetic composition is a face cosmetic and the cosmetically active agent comprises a pigment.

12. The cosmetic composition of claim 1 or 2, wherein the cosmetic agent comprises a hydrophobic material, wherein the cosmetically acceptable carrier stabilizes the hydrophobic material in the aqueous medium.

13. The cosmetic composition of claim 2, wherein said cosmetic agent selected to treat imperfections or disorders of the skin is selected from the group consisting of acidulents, antiacne agents, anti-aging agents, anti-inflammatories, anti-irritants, antioxidants, depilatories, detergents, disinfectants, emollients, exfoliants, humectants, lubricants, moisturizers, skin conditioners, skin protectants, skin lightening agents, skin soothing agents, sunscreens, and tanning accelerators and mixtures thereof.

14. The composition of claim 4, wherein said composition further comprises a cosmetic agent selected from the group consisting of humectants and emollients.

15. The composition of claim 1 or 2, further comprising one or more
5 additives selected from the group consisting of preservatives, abrasives, acidulents, antiacne agents, anti-aging agents, antibacterials, anticaking, anticaries agents, anticellulites, antidandruff, antifungal, anti-inflammatories, anti-irritants, antimicrobials, antioxidants, astringents, antiperspirants, antiseptics, antistatic agents, binders, buffers, additional carriers, chelators, cell stimulants, cleansing agents,
10 conditioners, deodorants, depilatories, detergents, dispersants, emollients, emulsifiers, enzymes, essential oils, exfoliants, fibers, film forming agents, fixatives, foaming agents, foam stabilizers, foam boosters, fungicides, gellants, glosser, hair conditioner, hair set resins, hair sheen agents, hair waving agents, humectants, lubricants, moisture barrier agents, moisturizers, ointment bases, opacifier, plasticizer, polish, polymers,
15 powders, propellant, protein, refatting agents, sequestrant, silicones, skin calming agents, skin cleansers, skin conditioners, skin healing, skin lightening agents, skin protectants, skin smoothing agents, skin softening agents, skin soothing agents, stabilizers, sunscreen agents, surfactants, suspending agents, tanning accelerators, thickeners, vitamins, waxes, wetting agents, liquefiers, colors, flavors and/or
20 fragrances.

16. The composition of claim 1, wherein the cosmetic composition takes a form selected from the group consisting of lotions, creams, sticks, roll-on formulations, mousses, sprays, aerosols, pad-applied formulations and masks.

25

17. The composition of claim 1, wherein the viscosification occurs at a temperature in the range of about 27-40°C.

18. The composition of claim 1, wherein the viscosification occurs at a
30 temperature in the range of about 30 to 37°C.

19. The composition of claim 1, wherein said composition is formulated as a product selected from the group consisting of baby products, baby shampoos, lotions, powders and creams; bath preparations, bath oils, tablets and salts, bubble baths, bath fragrances, bath capsules; eye makeup preparations, eyebrow pencil, eyeliner, eye shadow, eye lotion, eye makeup remover, mascara; fragrance preparations, colognes, toilet waters, powders and sachets; noncoloring hair preparations, hair conditioner, hair spray, hair straighteners, permanent waves, rinses, shampoos, tonics, dressings and other grooming aids; color cosmetics; hair coloring preparations, hair dye, hair tints, hair color sprays, hair lighteners and hair bleaches; makeup preparations, face powders, foundations, leg and body paints, lipstick; makeup bases, rouges and makeup fixatives; manicuring preparations, basecoats, undercoats, cuticle softeners, nail creams, nail extenders, nail polish and enamel, and remover, oral hygiene products, dentrifices, mouthwashes; personal cleanliness, bath soaps, detergents, deodorants, douches and feminine hygiene products; shaving preparations, aftershave lotion, beard softeners, men's talcum shaving cream, shaving soap, preshave lotions; skin care preparations, skin cleansing preparations, skin antiseptics, depilatories, face and neck cleansers, body and hand cleansers, foot powders; moisturizers, night preparations, paste masks, skin fresheners; and suntan preparations, suntan creams, gels and lotions, and indoor tanning preparations.

20

20. The cosmetic composition of claim 1 or 2, wherein the poloxamer component is present in an amount in the range of about 0.01 to 20 wt% and the poly(acrylic acid) component is present in the amount of about 0.01 to 20 wt%.

25

21. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamers.

30

22. The cosmetic composition of claim 1, wherein the polymer network comprises a plurality of poloxamer components randomly bonded to a poly(acrylic acid) backbone.

23. The cosmetic composition of claim 1, wherein the reversibly
viscosifying polymer composition comprises a plurality of poly(acrylic acid)
components randomly bonded to a poloxamer component.

5 24. The cosmetic composition of claim 1, wherein the aqueous-based
medium is selected from the group consisting of water, salt solutions and water with
water-miscible organic compound(s).

25. The cosmetic compositions of claim 1, further comprising an additive
10 selected to increase transition temperature and increase viscosity of the reversible
viscosifying polymer network.

26. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature and decrease viscosity of the reversible
15 viscosifying polymer network.

27. The cosmetic composition of claim 1, further comprising an additive
selected to increase transition temperature without affecting viscosity of the reversible
viscosifying polymer network.

20 28. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and increase viscosity of the reversible
viscosifying polymer network.

25 29. The cosmetic composition of claim 1, further comprising an additive
selected to decrease transition temperature and decrease viscosity of the reversible
viscosifying polymer network.

30. The cosmetic composition of claim 1, further comprising an additive selected to decrease transition temperature without affecting viscosity of the reversible viscosifying polymer network.

5 31. The cosmetic composition of claim 1, further comprising an additive selected to increase viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

10 32. The cosmetic composition of claim 1, further comprising an additive selected to decrease viscosity without affecting transition temperature of the reversibly viscosifying polymer network.

15 33. The cosmetic composition of claim 1 or 2, characterized in that the gel remains translucent to light before and after response to the environmental stimulus.

34. The cosmetic composition of claim 1, wherein the poly(acrylic acid) is branched.

20 35. Method of making a cosmetic composition, comprising:
dissolving a poloxamer capable of aggregation in response to a change in temperature in acrylic acid monomer;
initiating polymerization of the monomer to form a poly(acrylic acid) randomly bonded to the poloxamer, so as to form a reversibly viscosifying polymer composition;
mixing the reversibly gelling polymer compositions with a cosmetic agent
25 which imparts a desired cosmetic effect to the composition.

36. The method of claim 36, wherein a polymerization initiator is selected to provide the polymer network having a selected temperature of viscosification.

30 37. The method of claim 36, wherein one or more poloxamers are added.

38. The cosmetic composition of claim 1, wherein the reversibly
viscosifying polymer network is present in an amount in the range of 0.01% - 10%.

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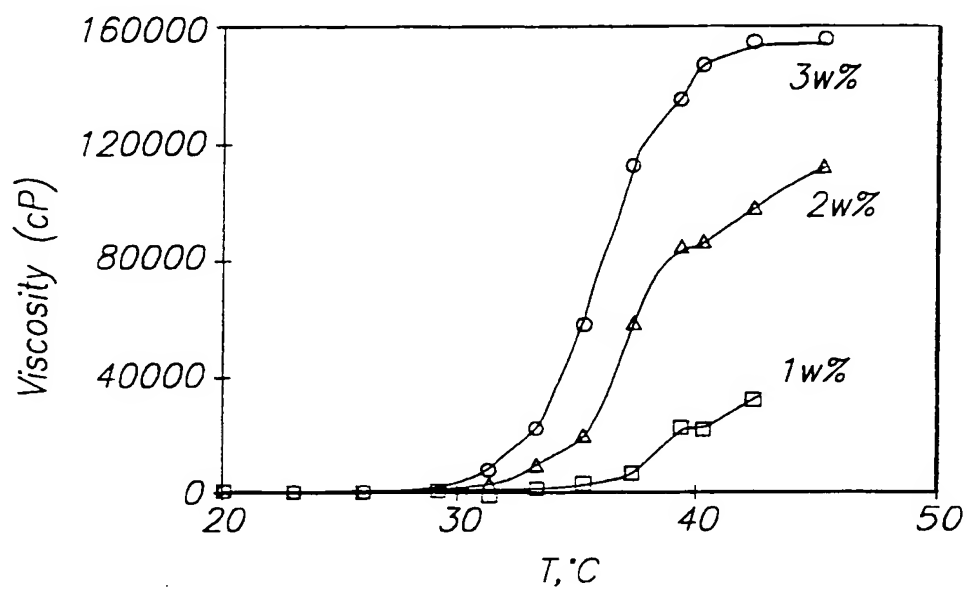


FIG. 1

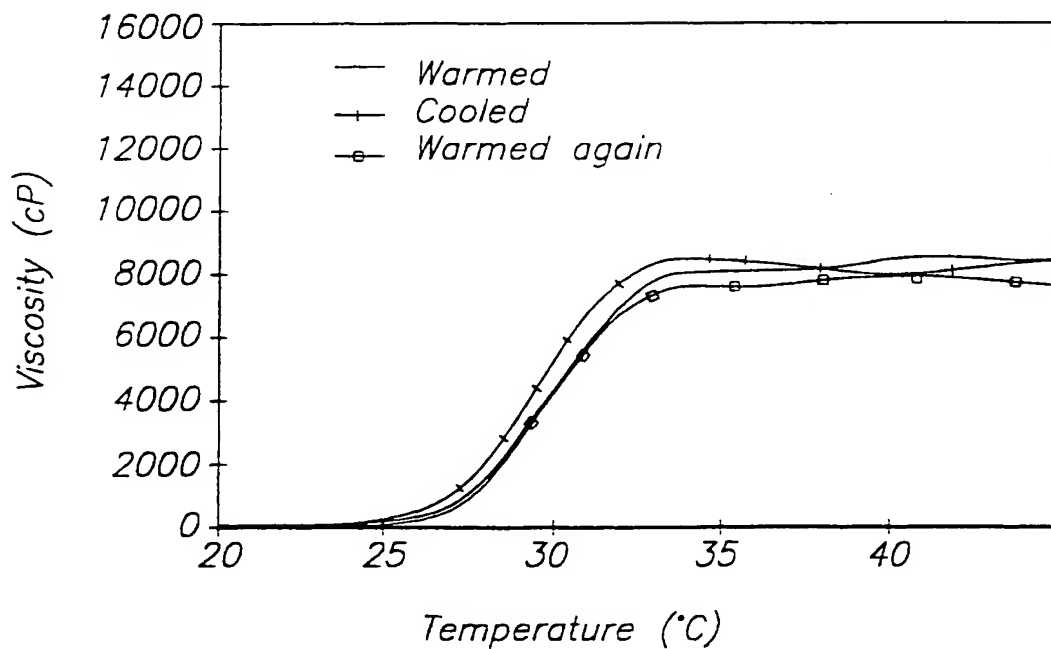


FIG. 2

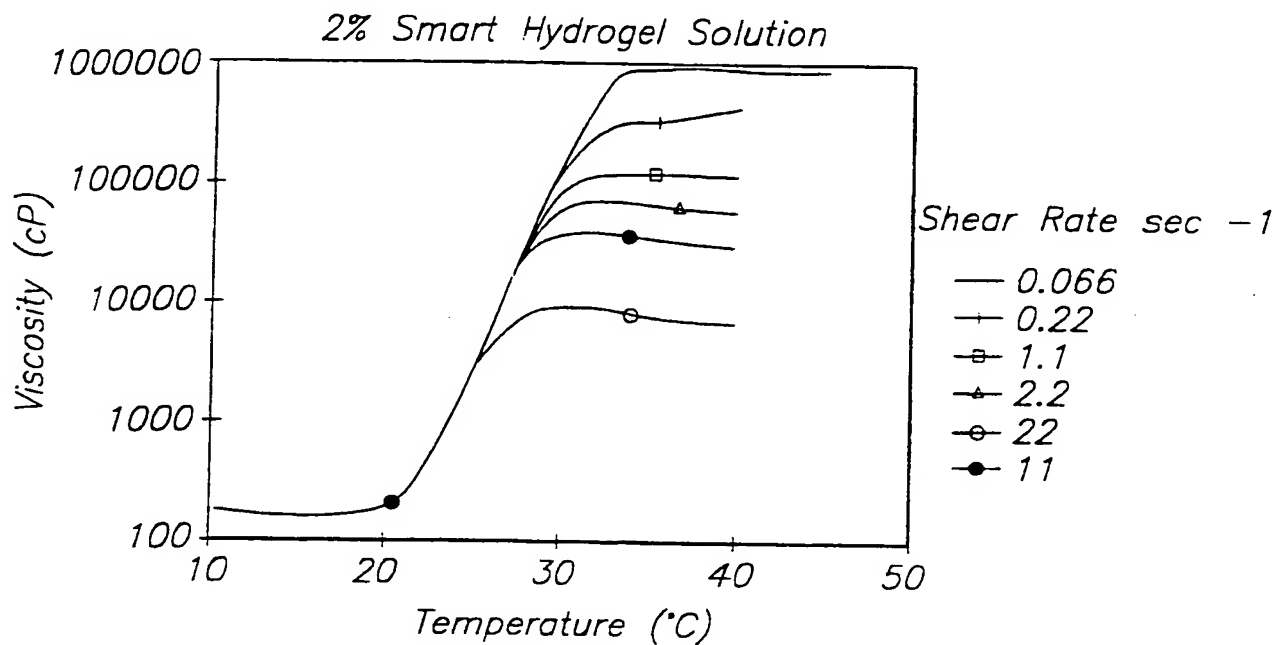


FIG. 3

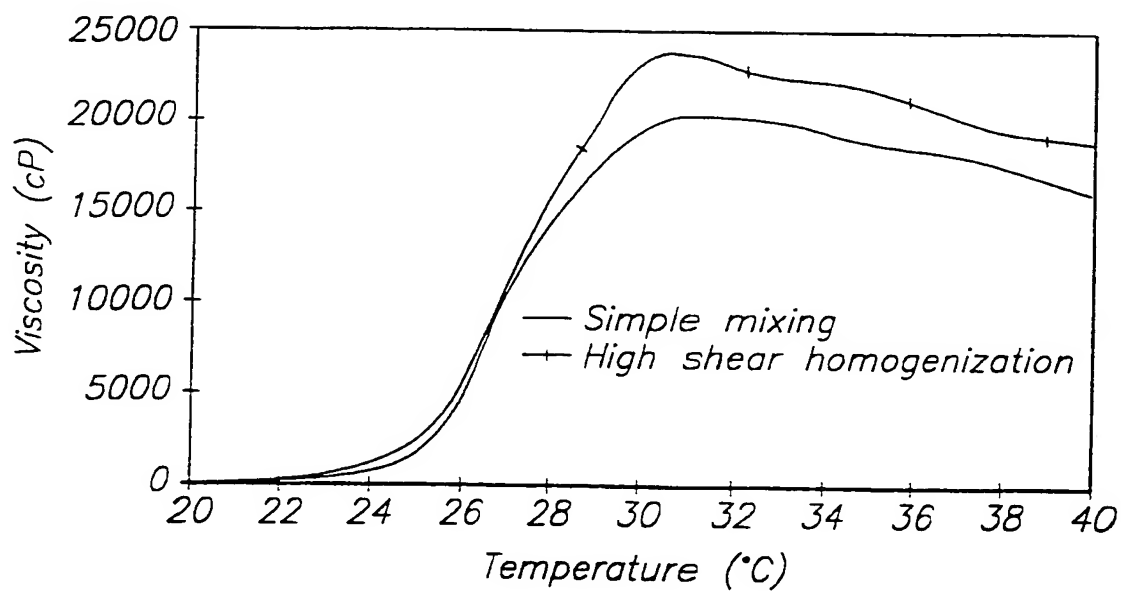


FIG. 4

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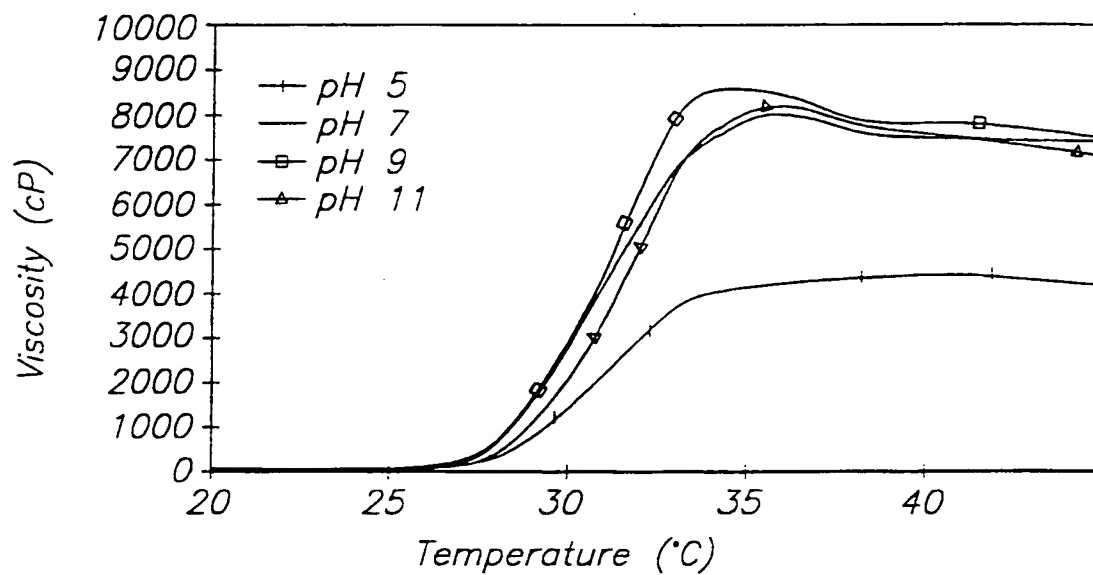


FIG. 5

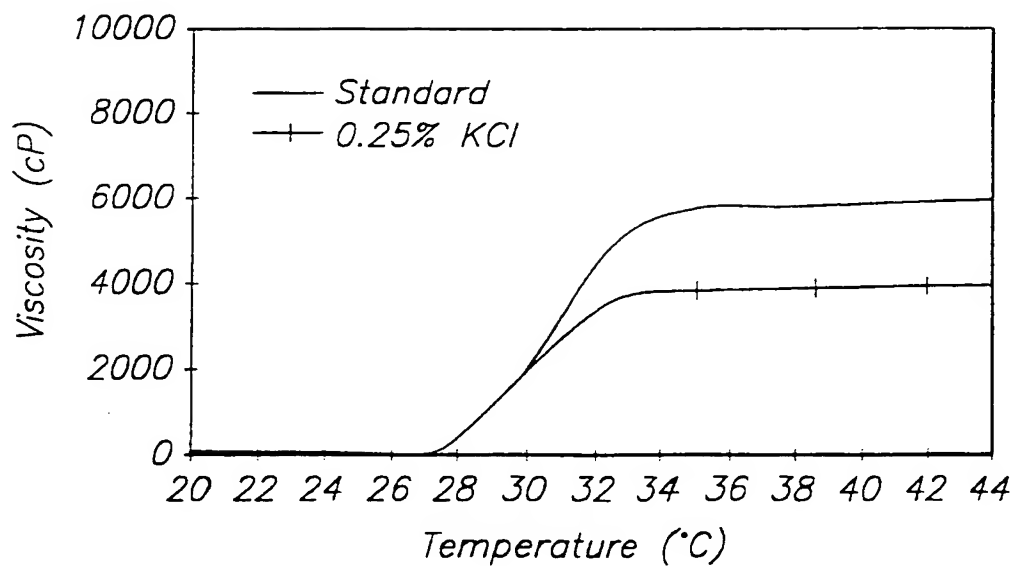


FIG. 6

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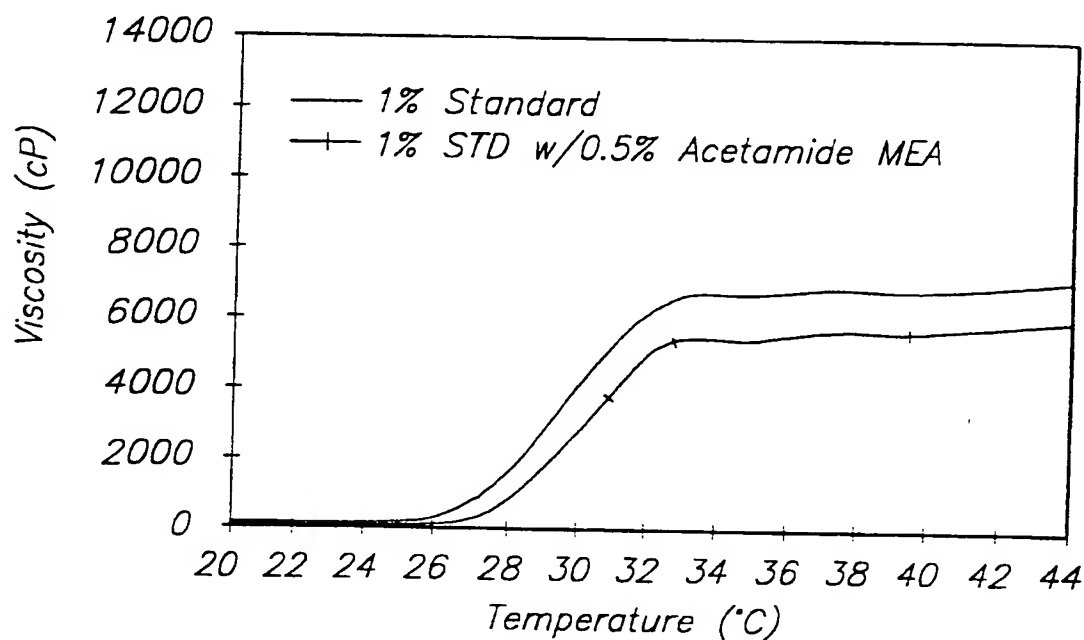


FIG. 7

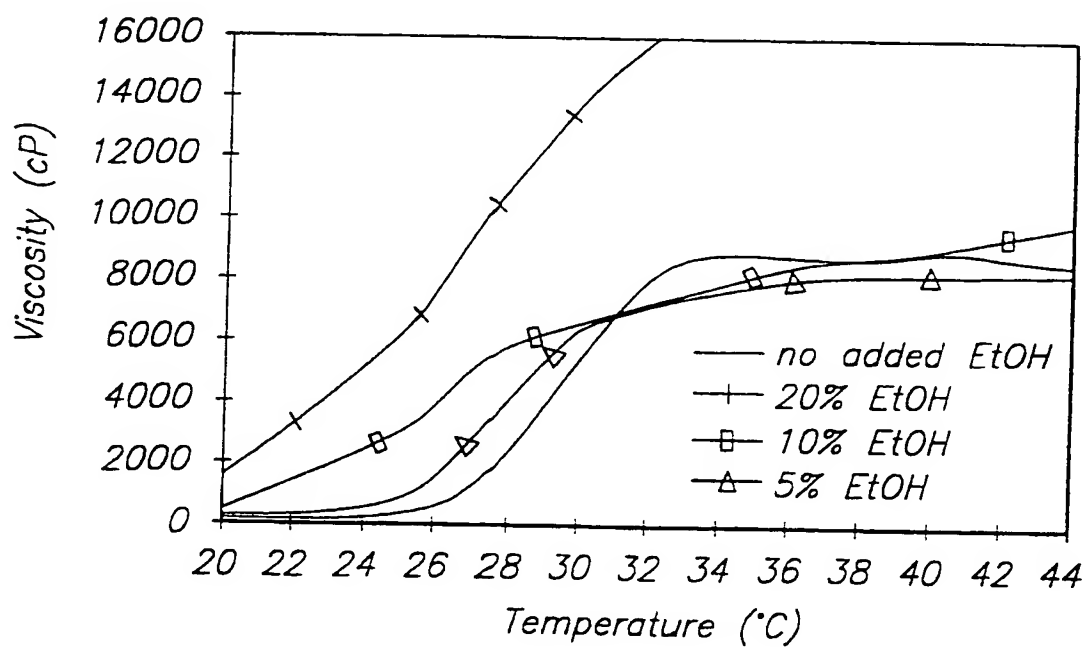
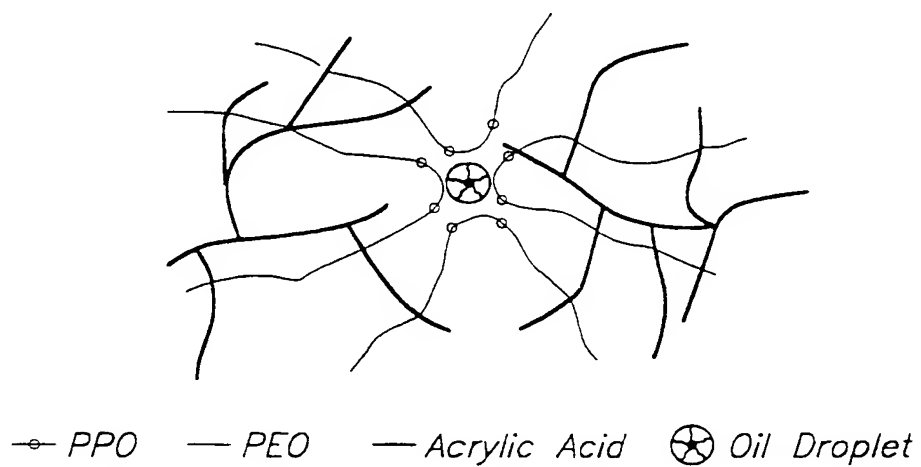
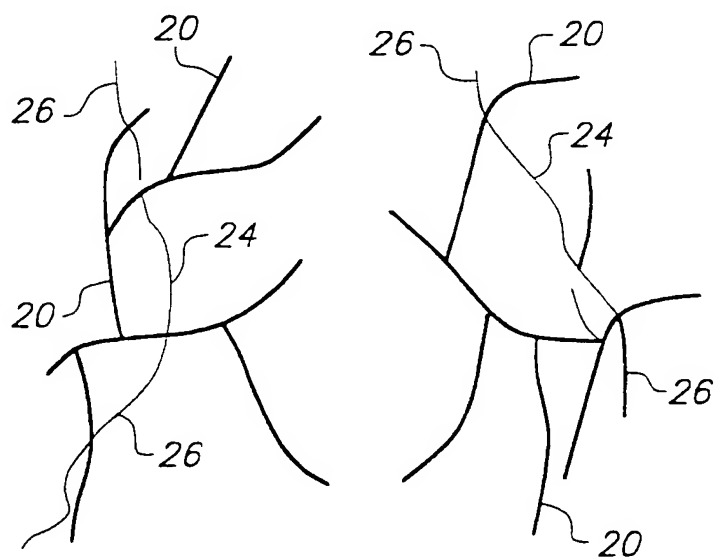
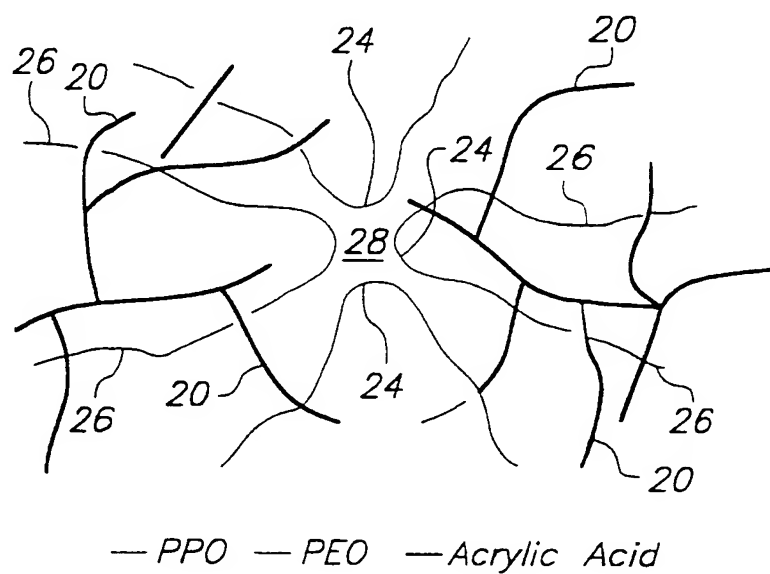
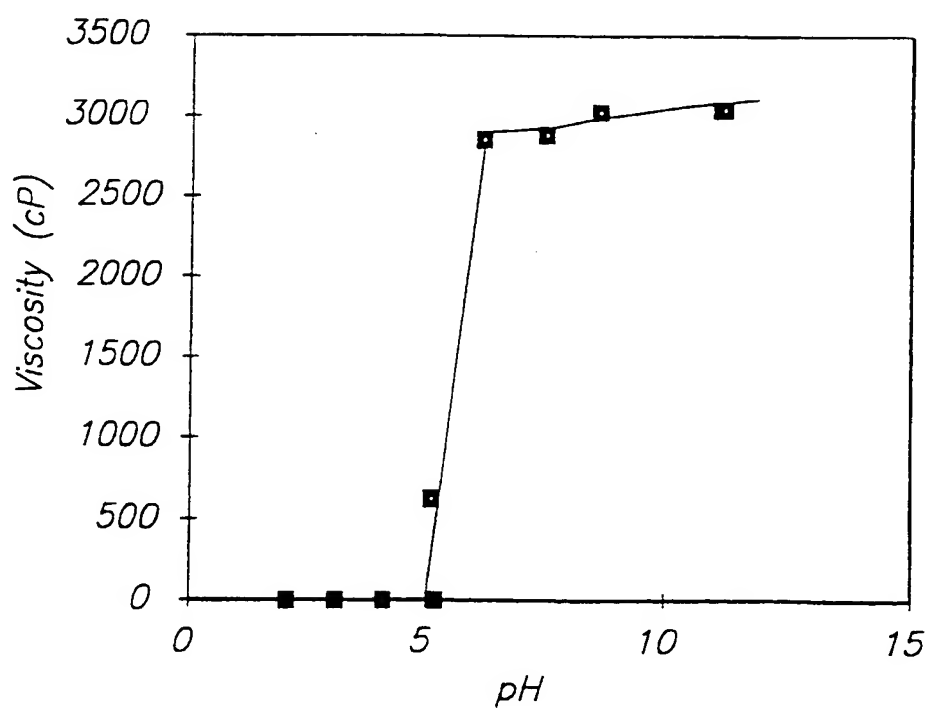


FIG. 8

**FIG. 9****FIG. 10A**

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**FIG. 10B****FIG. 11**

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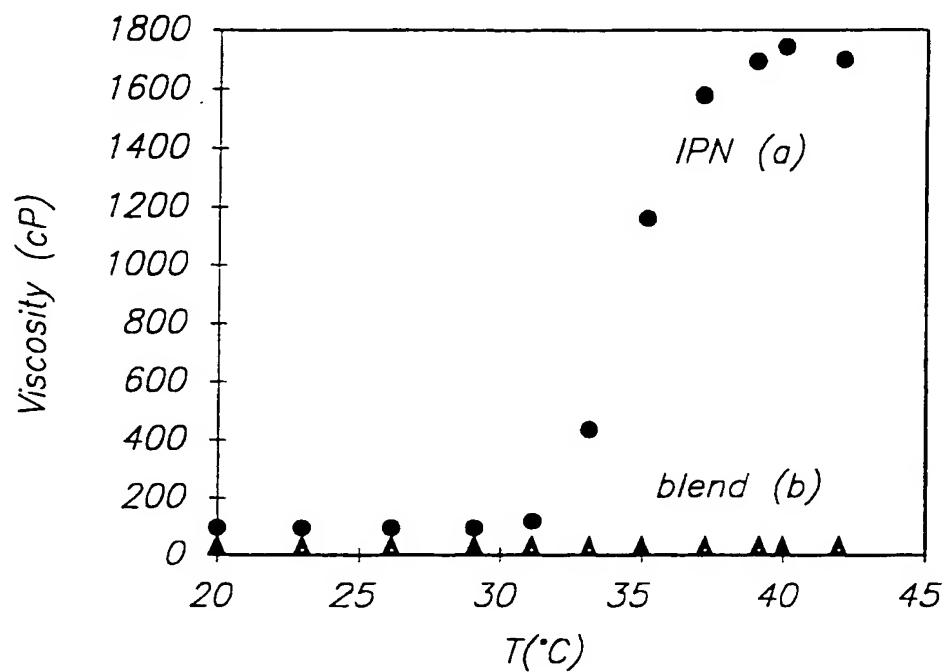


FIG. 12

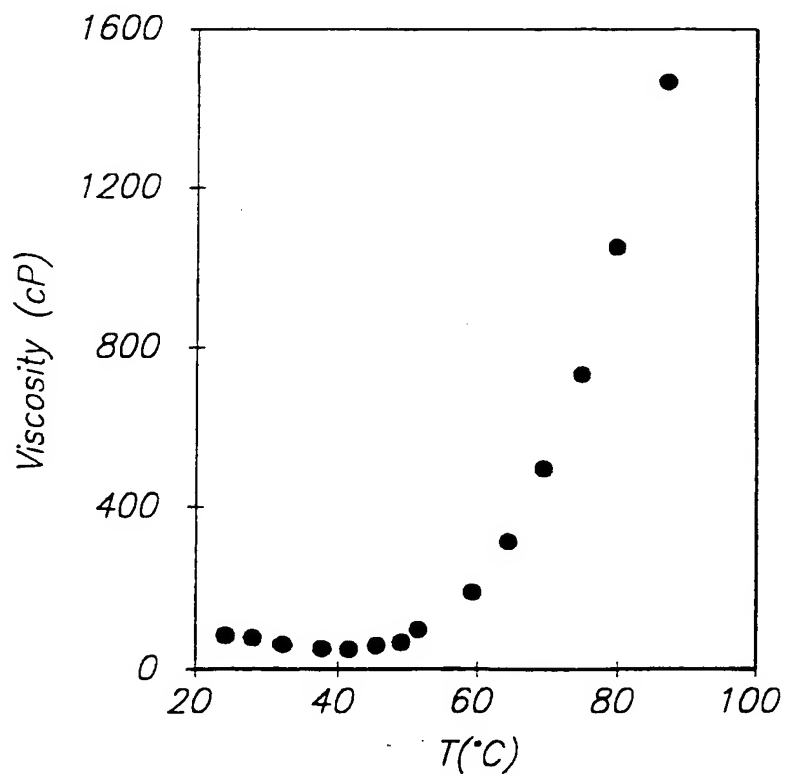
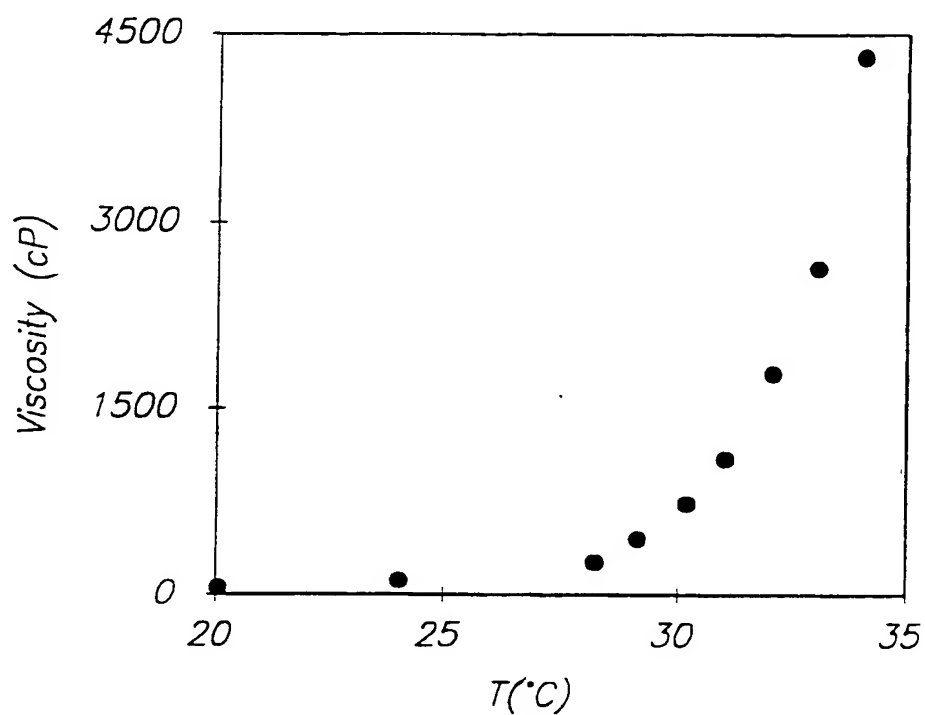
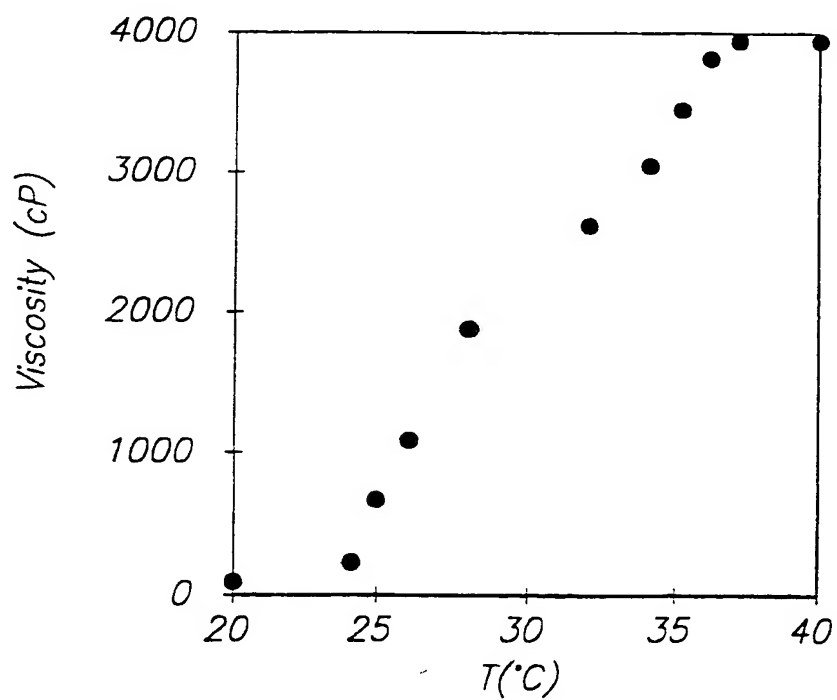


FIG. 13

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**FIG. 14****FIG. 15**

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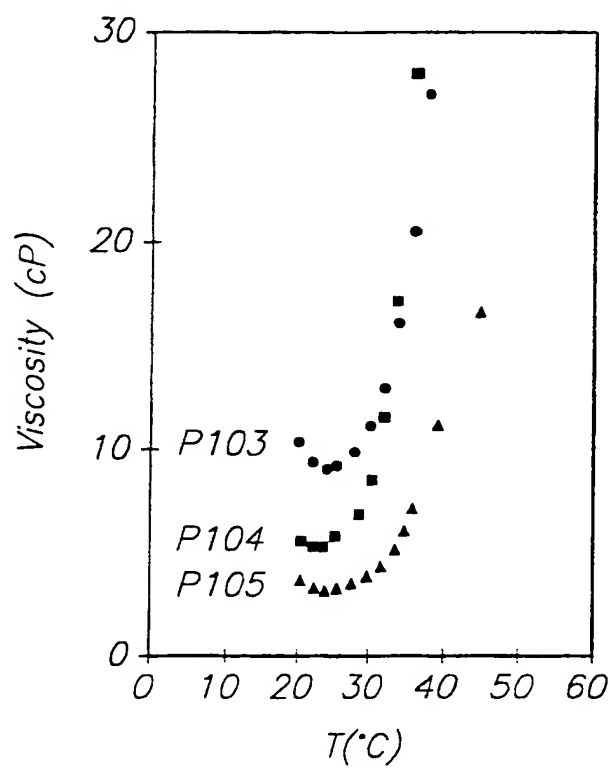


FIG. 16

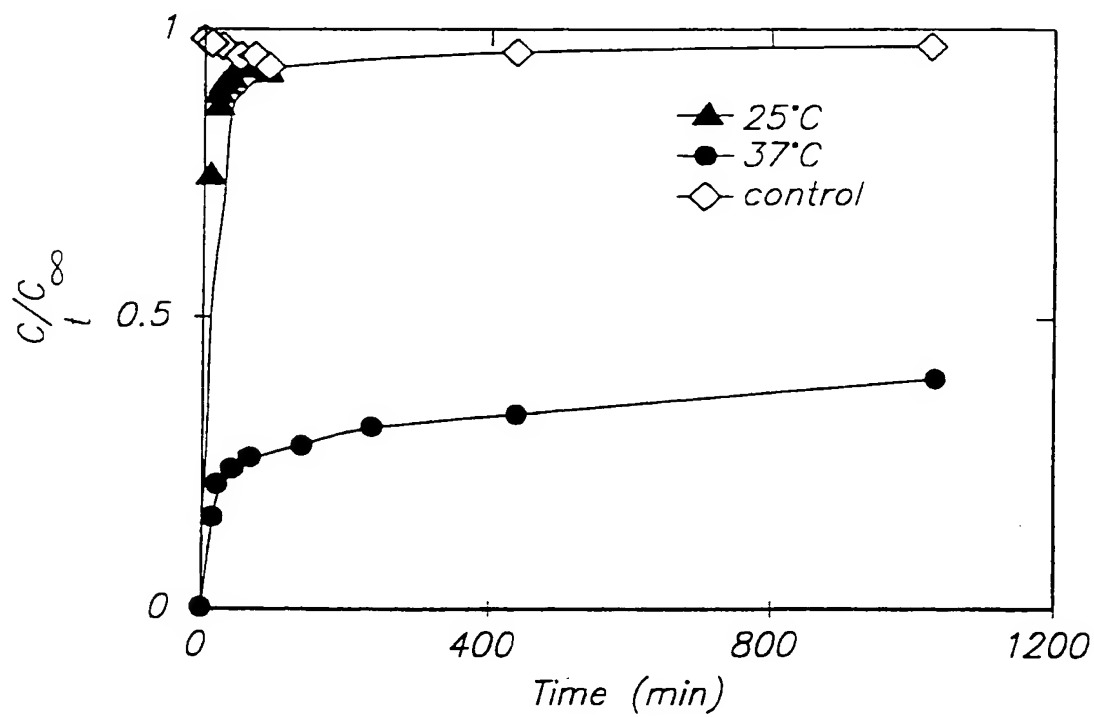


FIG. 17

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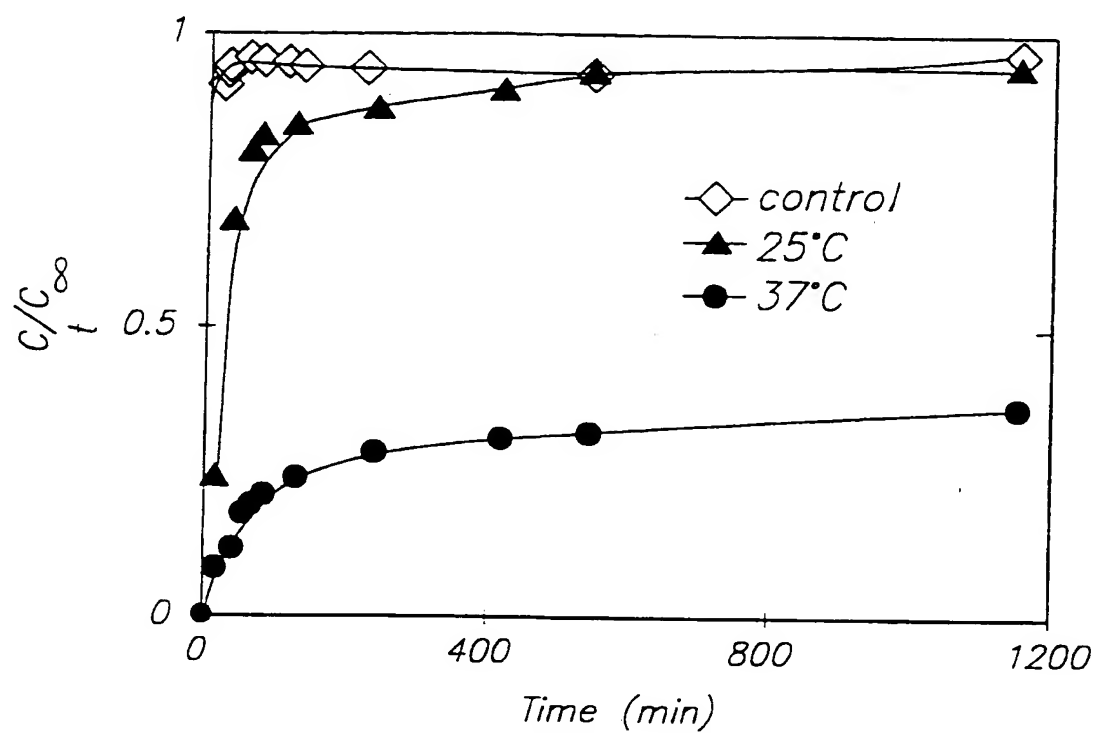


FIG. 18

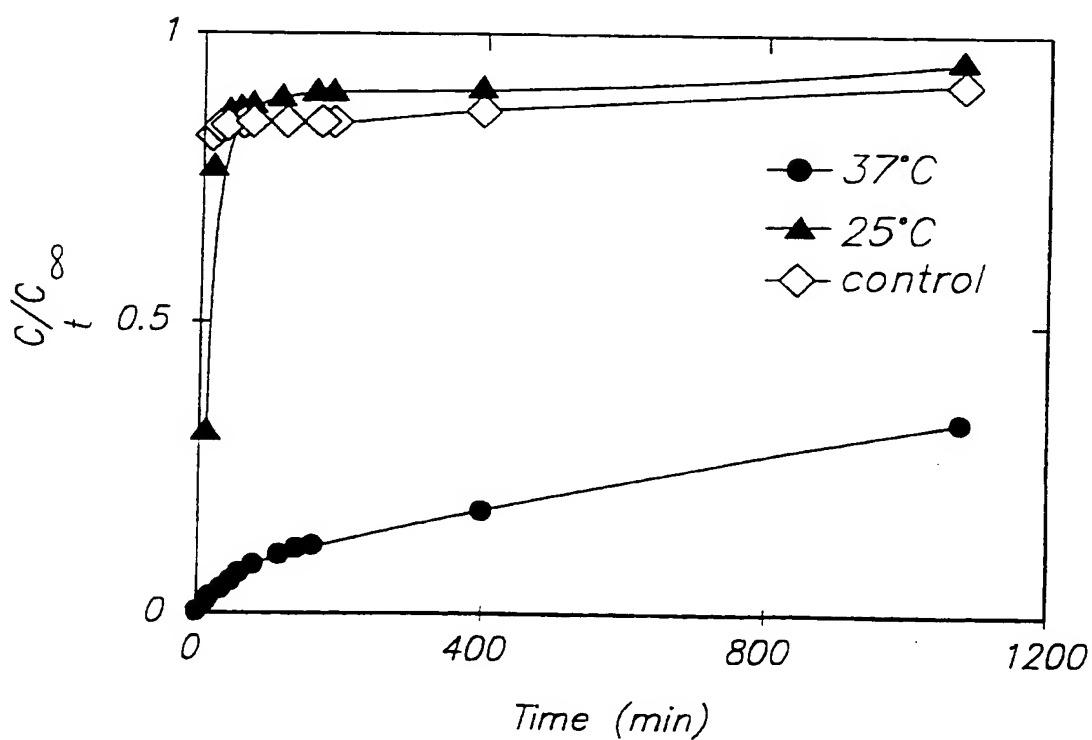


FIG. 19

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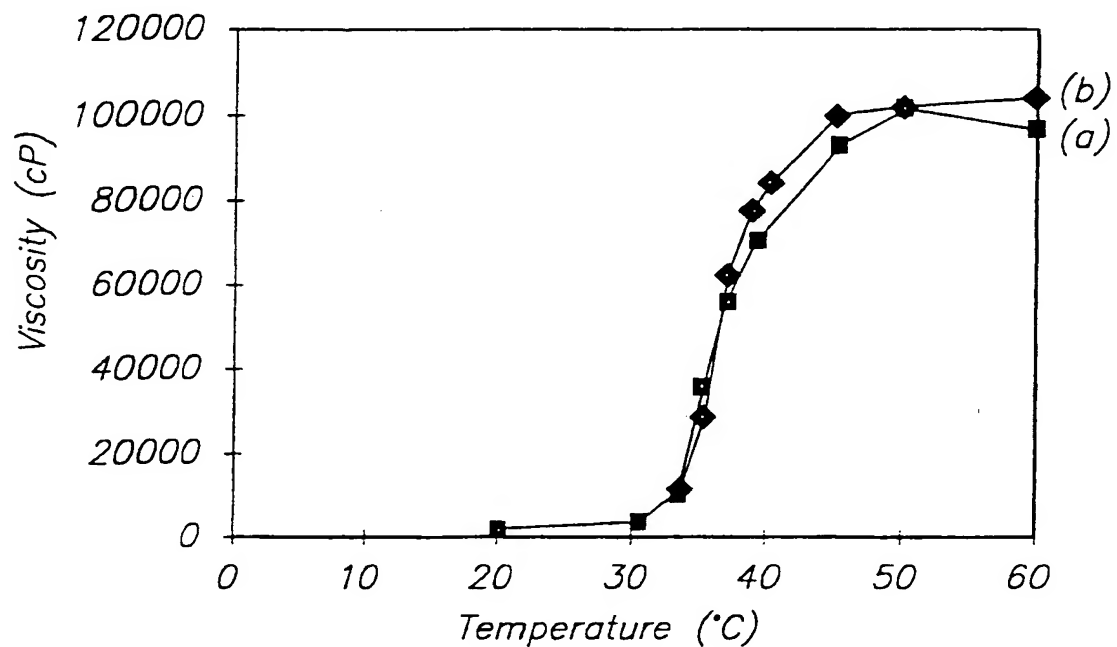


FIG. 20

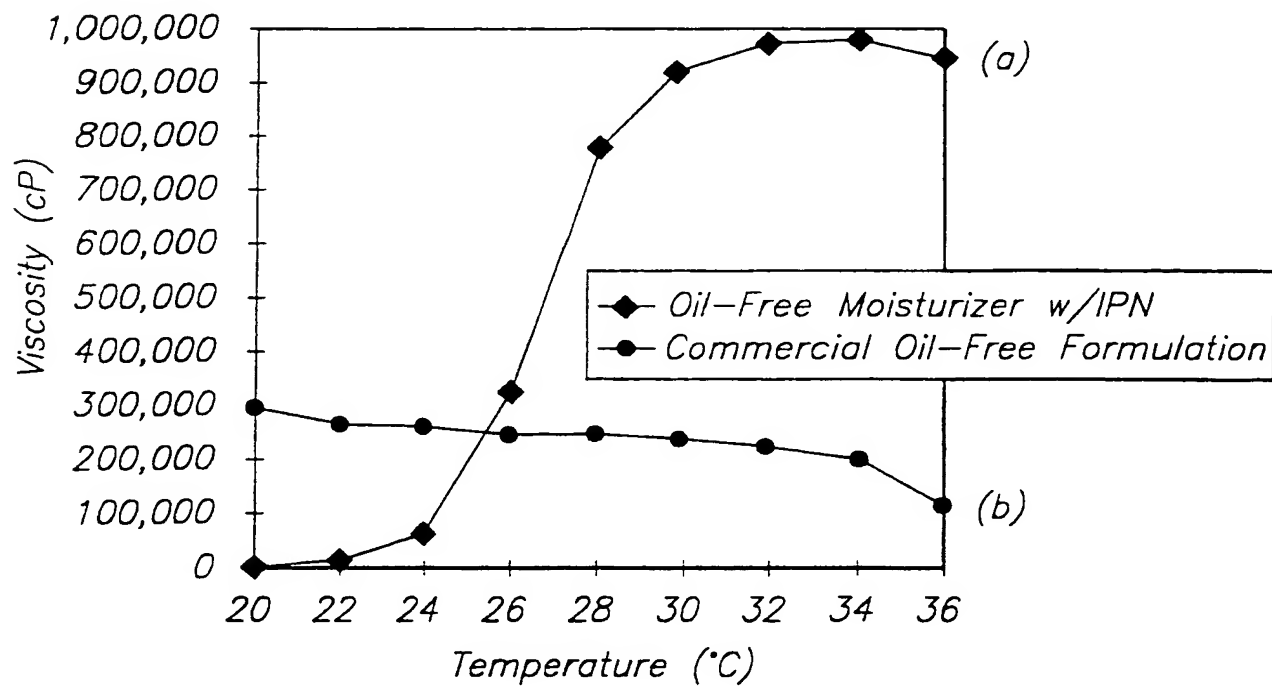


FIG. 21

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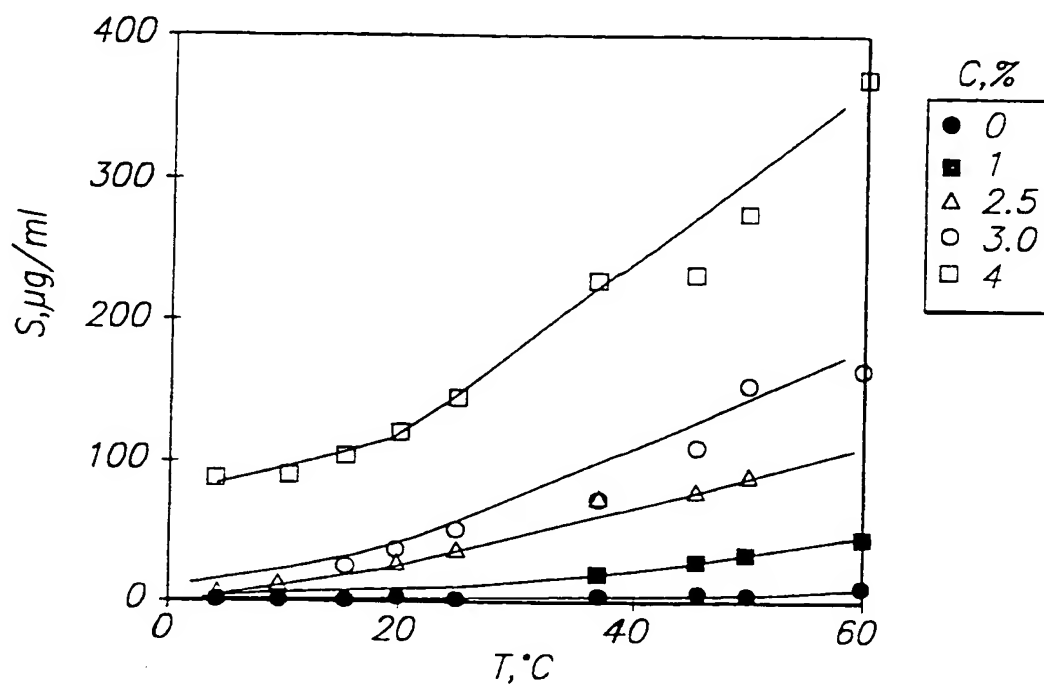


FIG. 22A

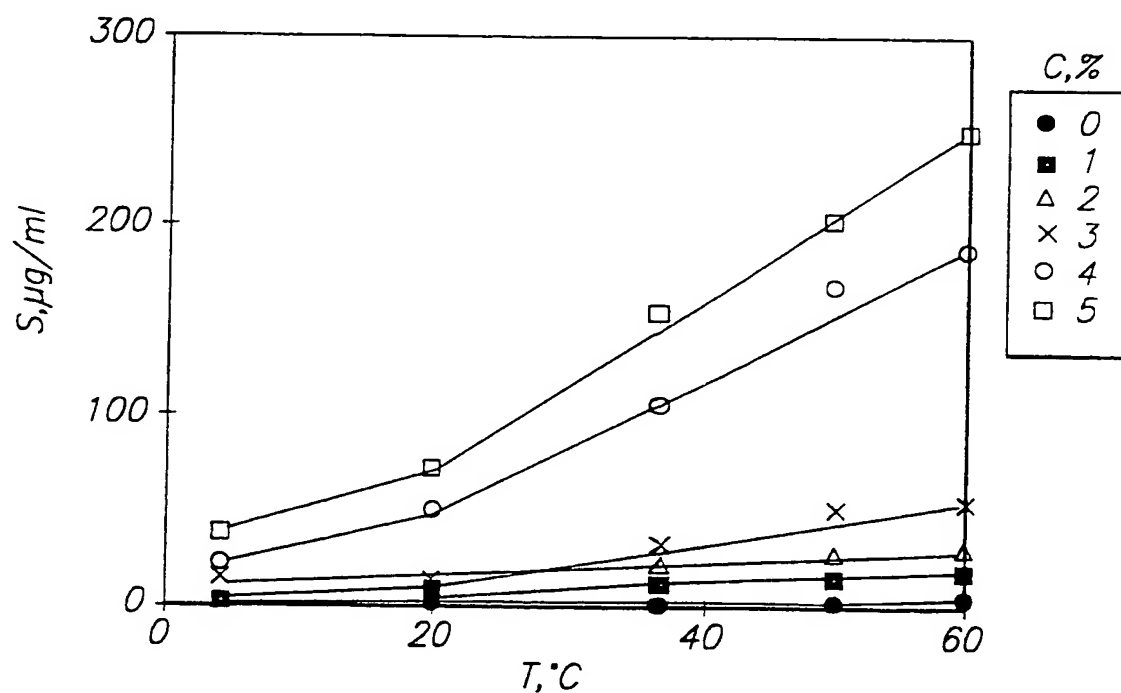


FIG. 22B

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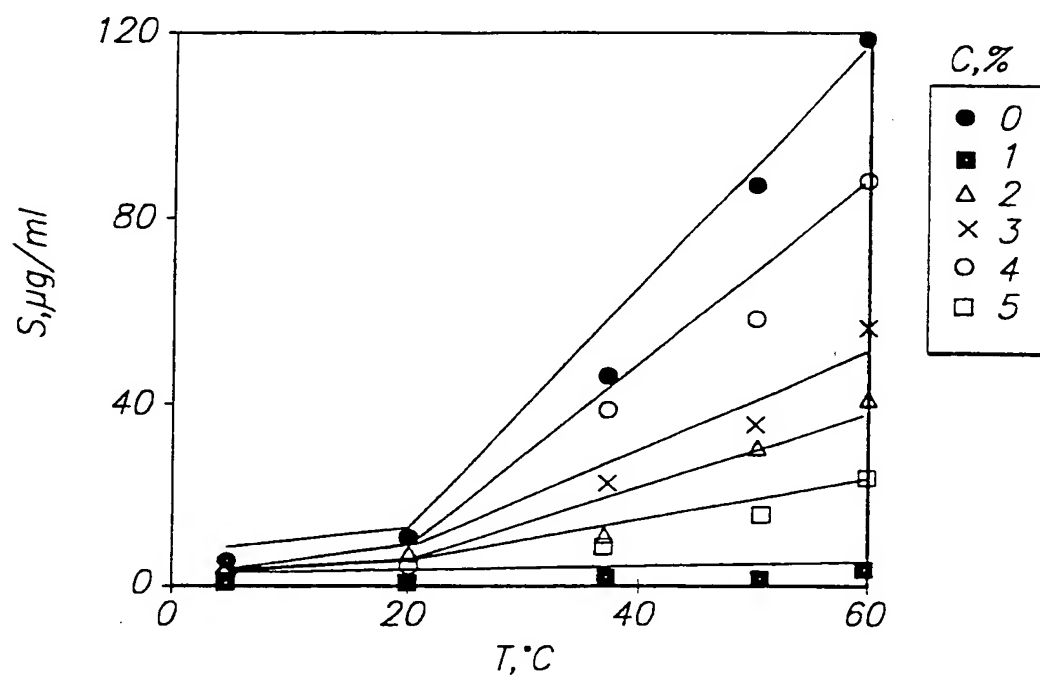


FIG. 22C

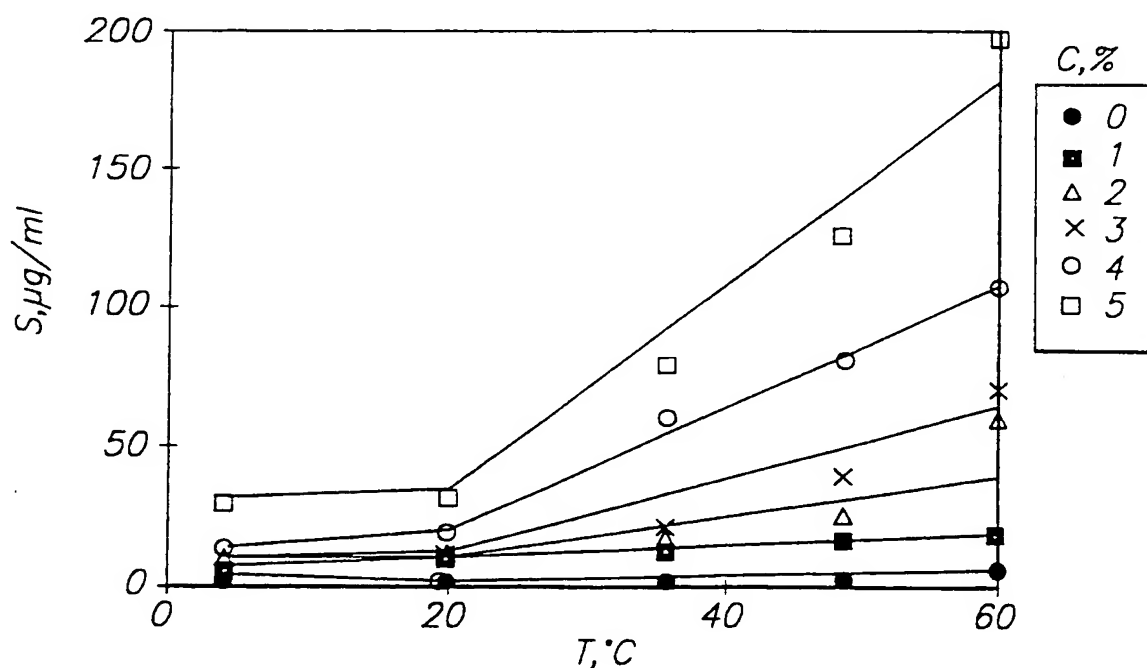


FIG. 22D

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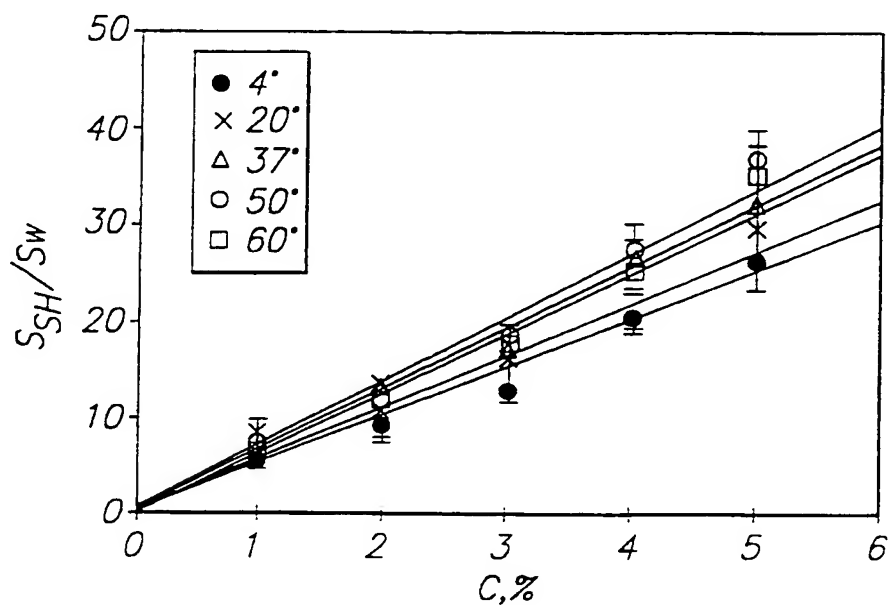


FIG. 23

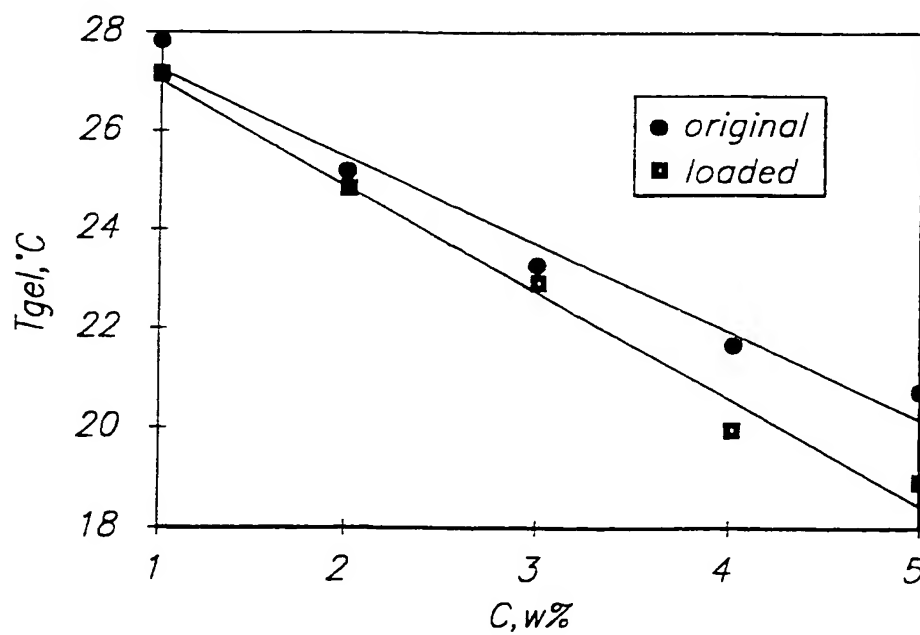


FIG. 24

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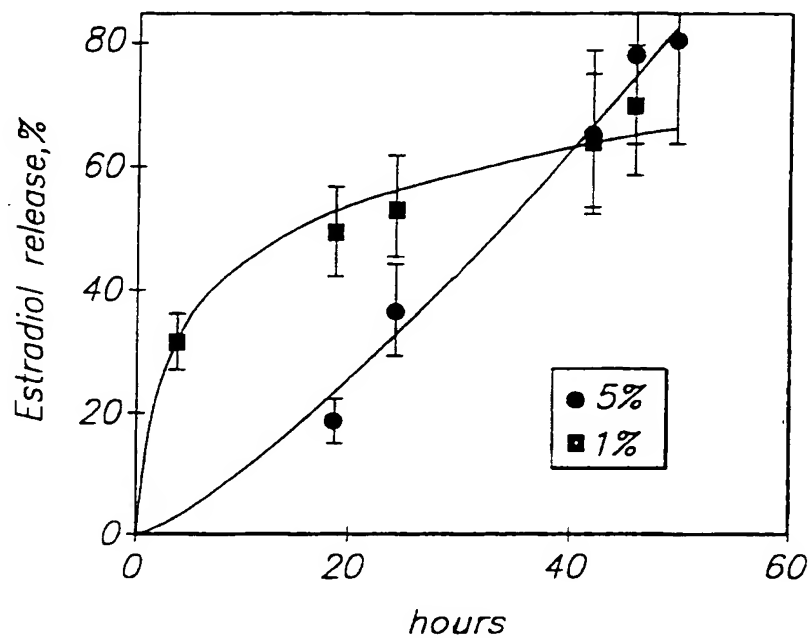


FIG. 25A

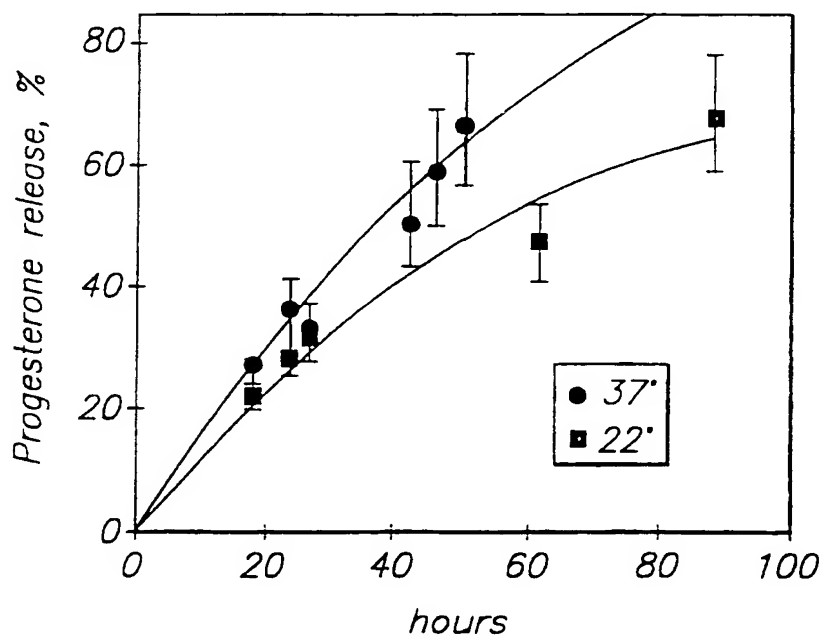


FIG. 25B

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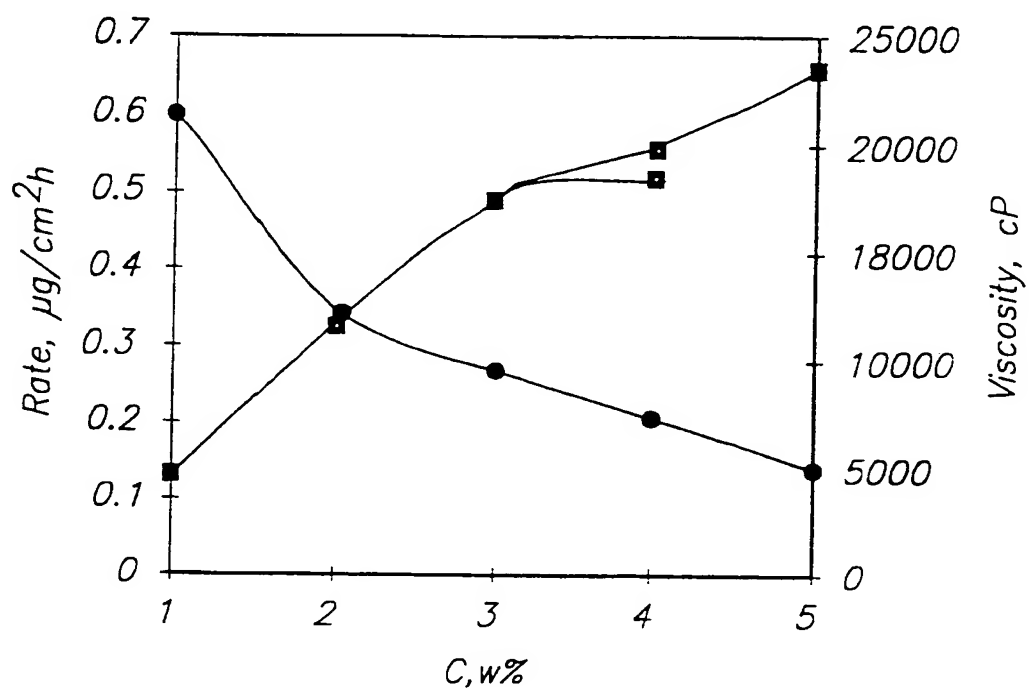


FIG. 26

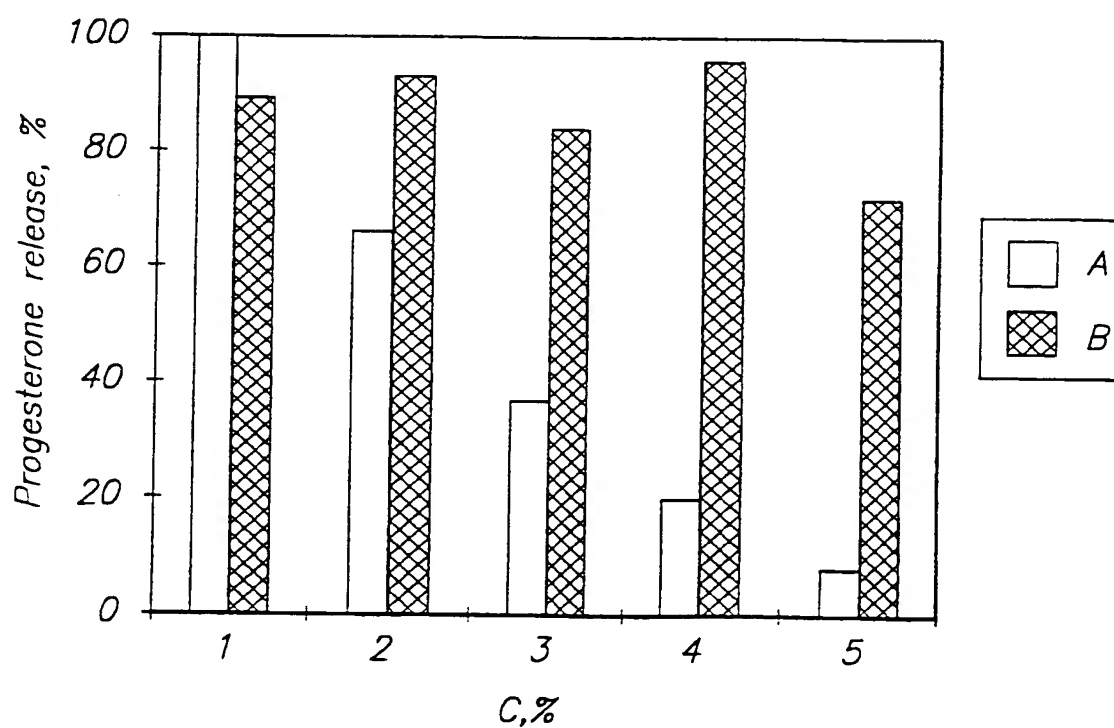
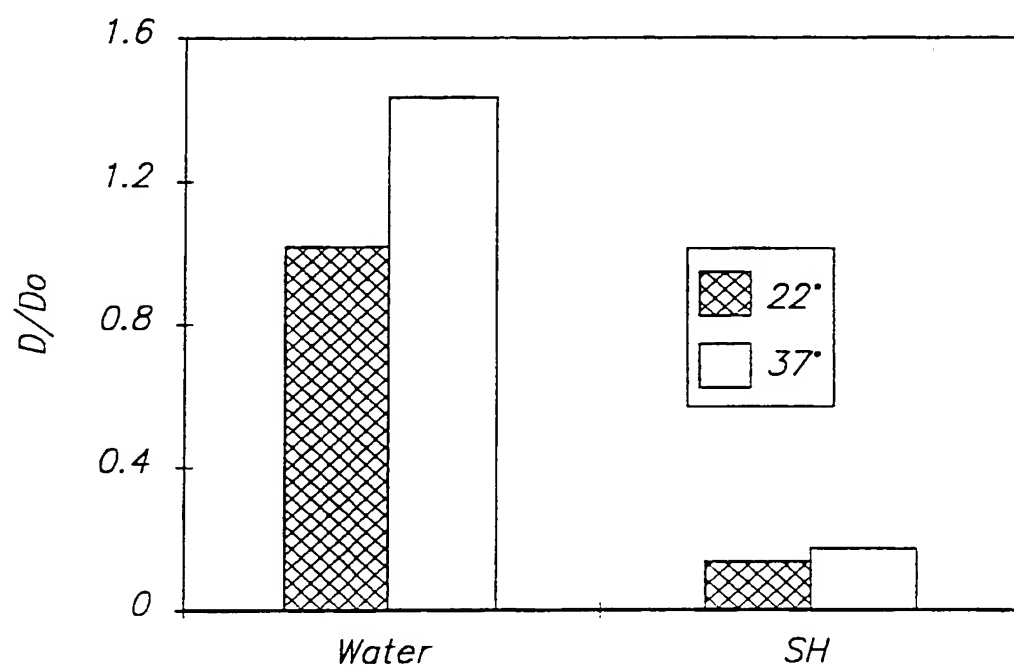


FIG. 27

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**FIG. 28**

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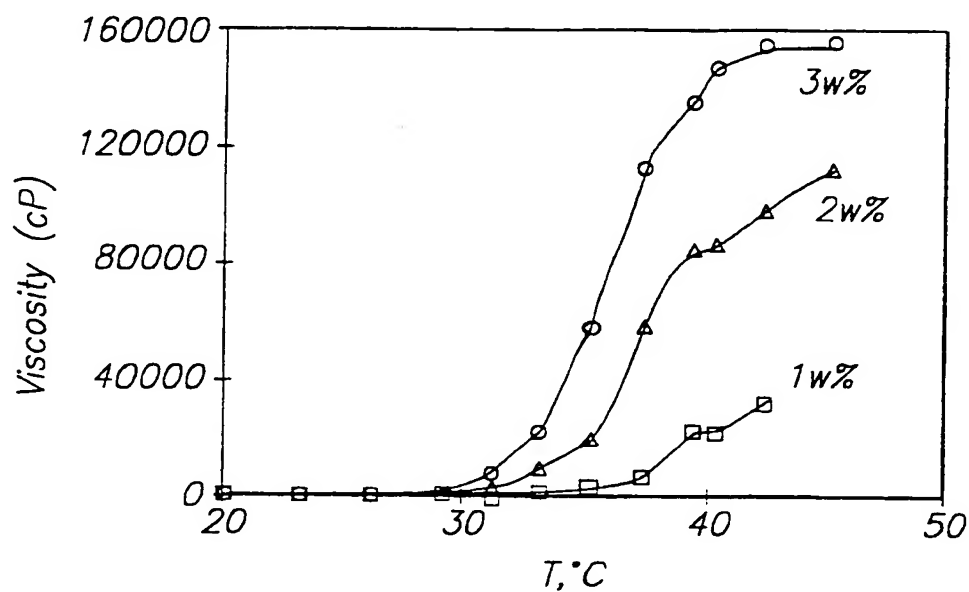


FIG. 1

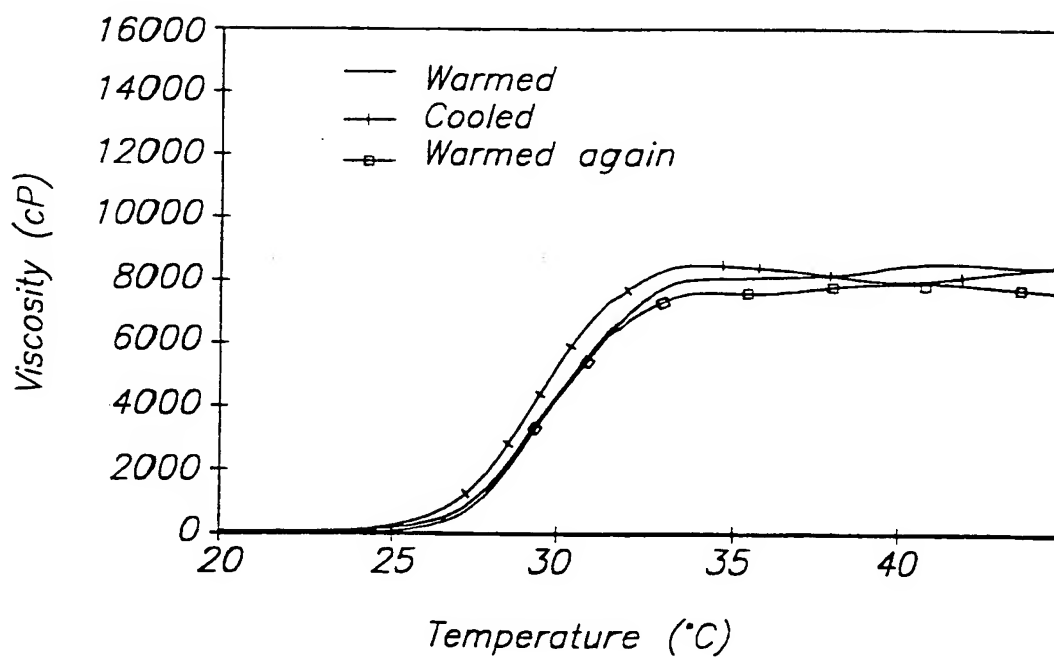


FIG. 2

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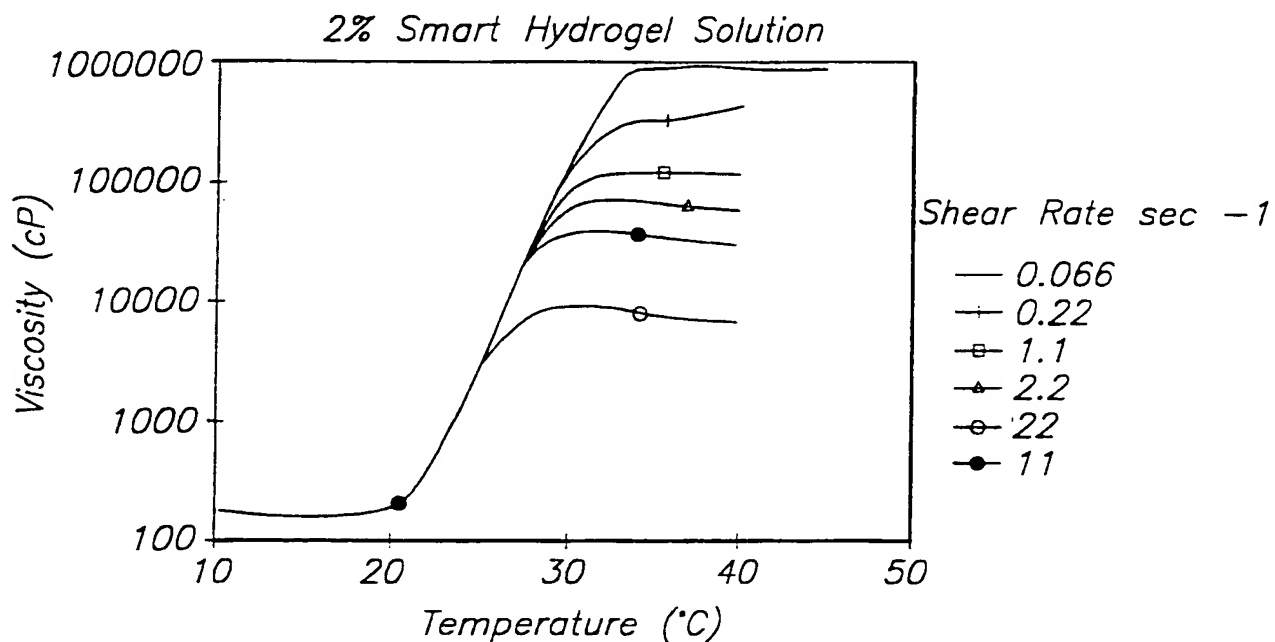


FIG. 3

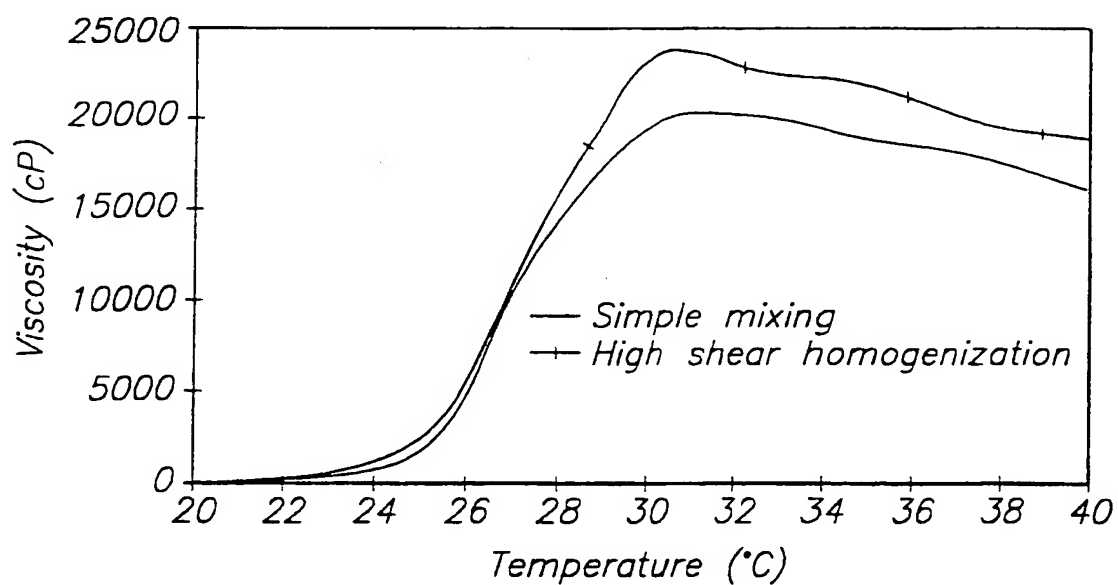


FIG. 4

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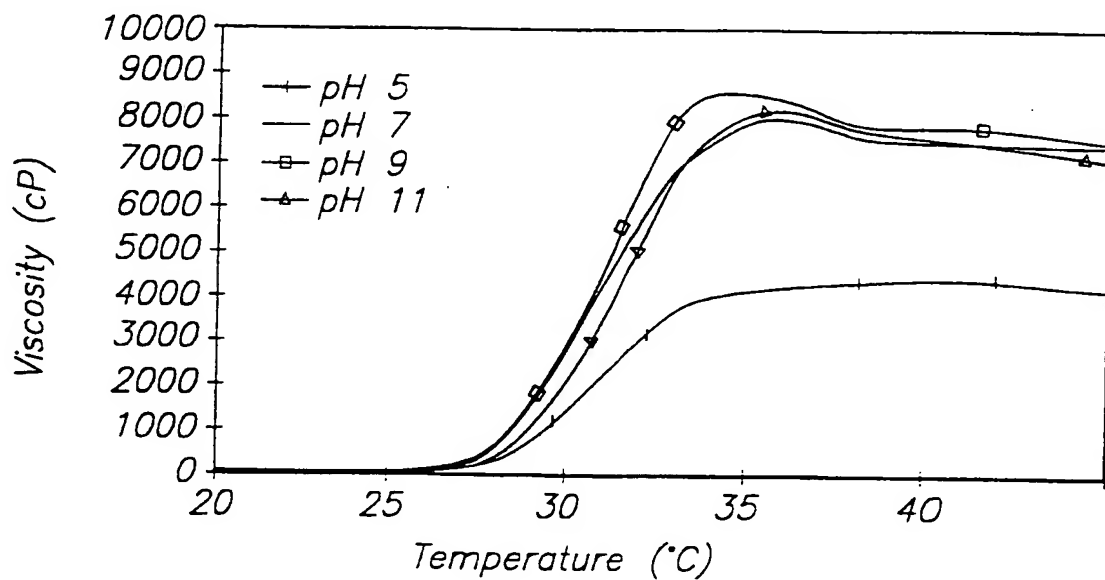


FIG. 5

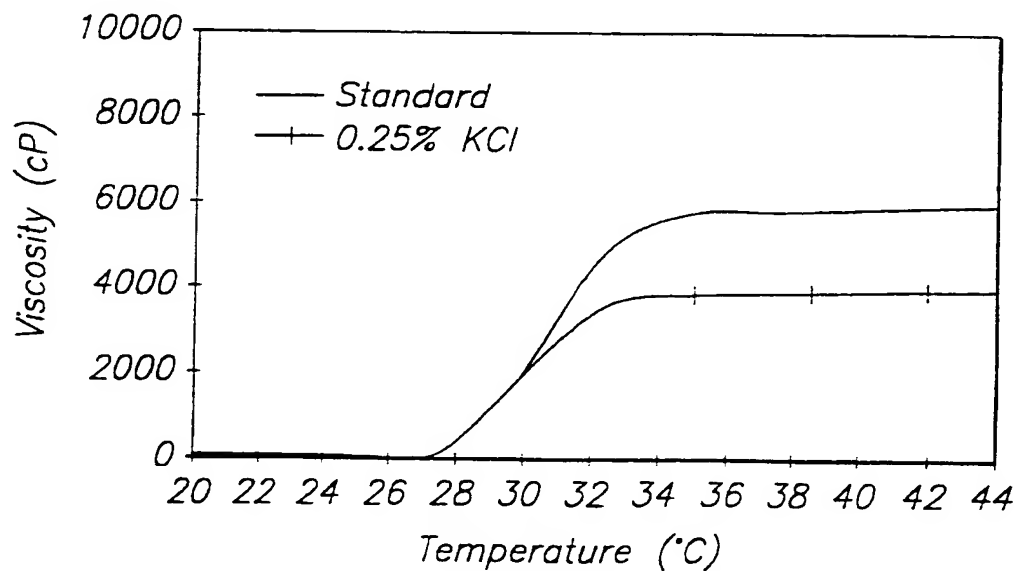


FIG. 6

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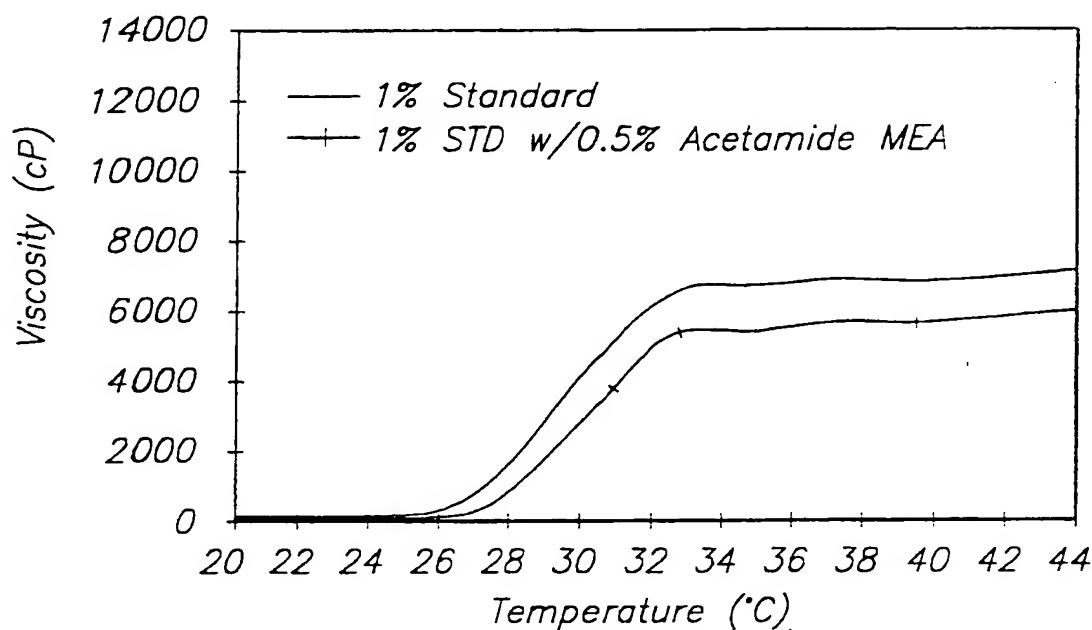


FIG. 7

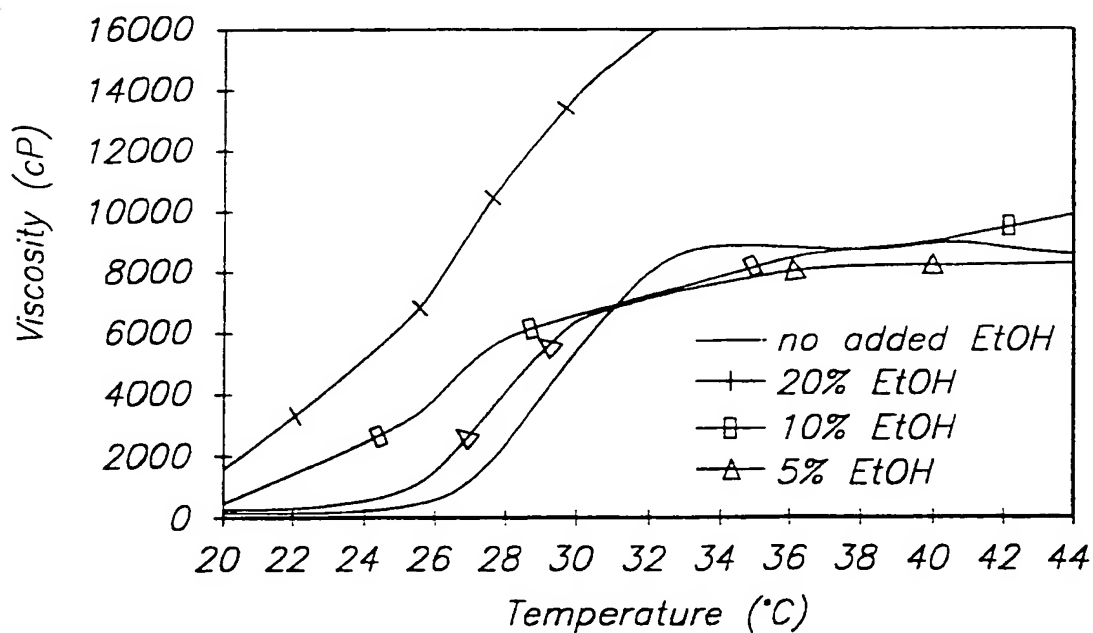
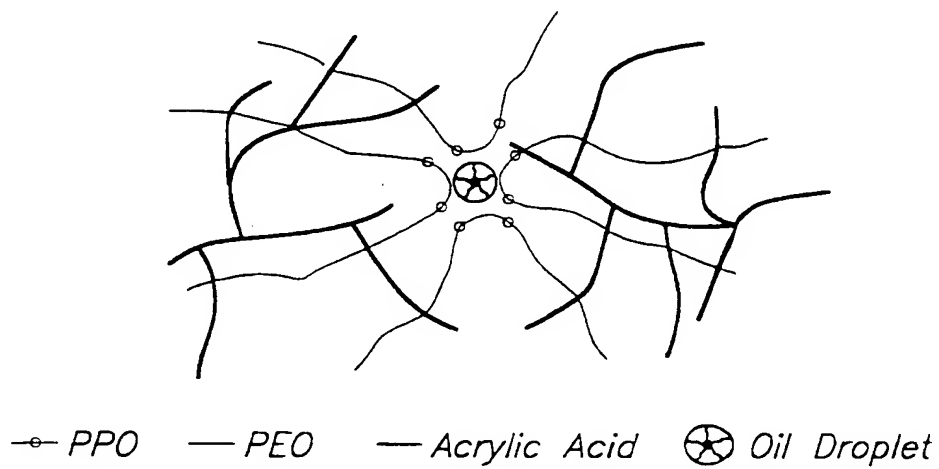
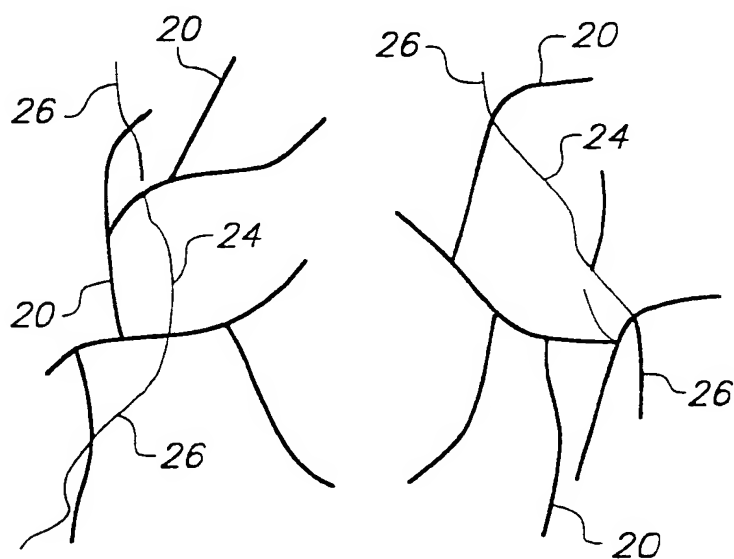


FIG. 8

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**FIG. 9****FIG. 10A**

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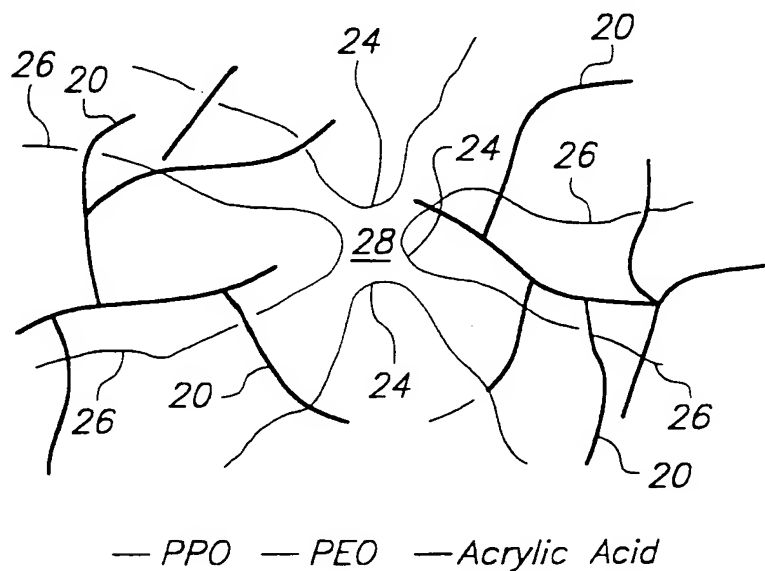


FIG. 10B

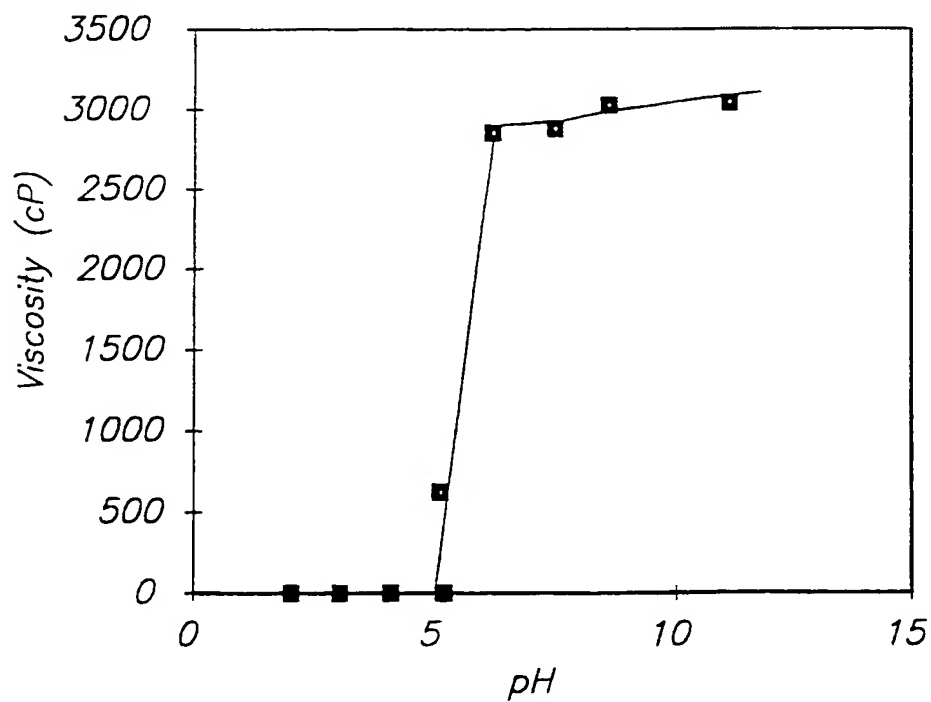


FIG. 11

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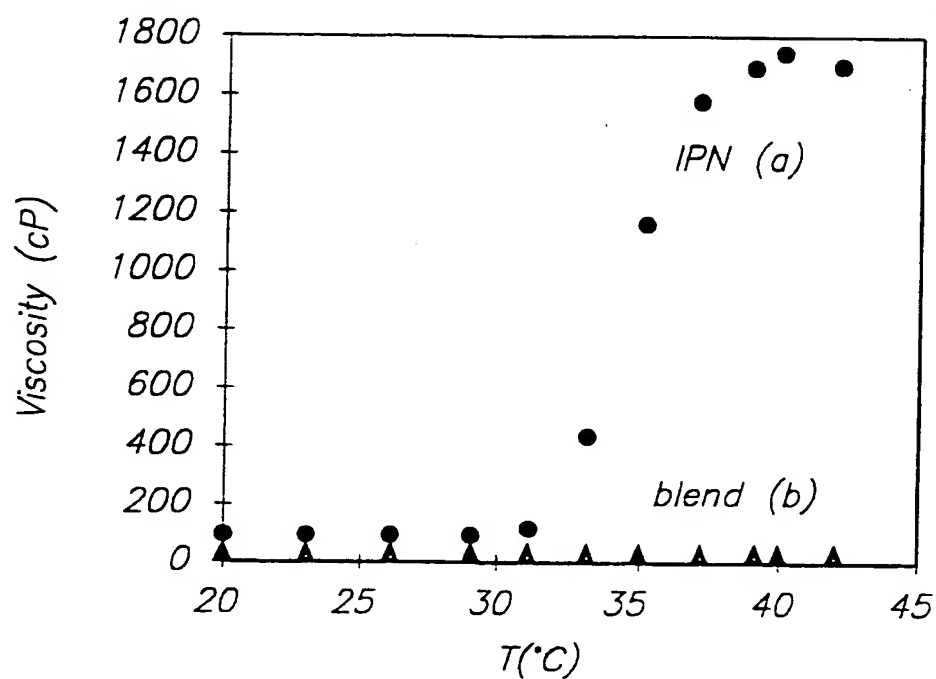


FIG. 12

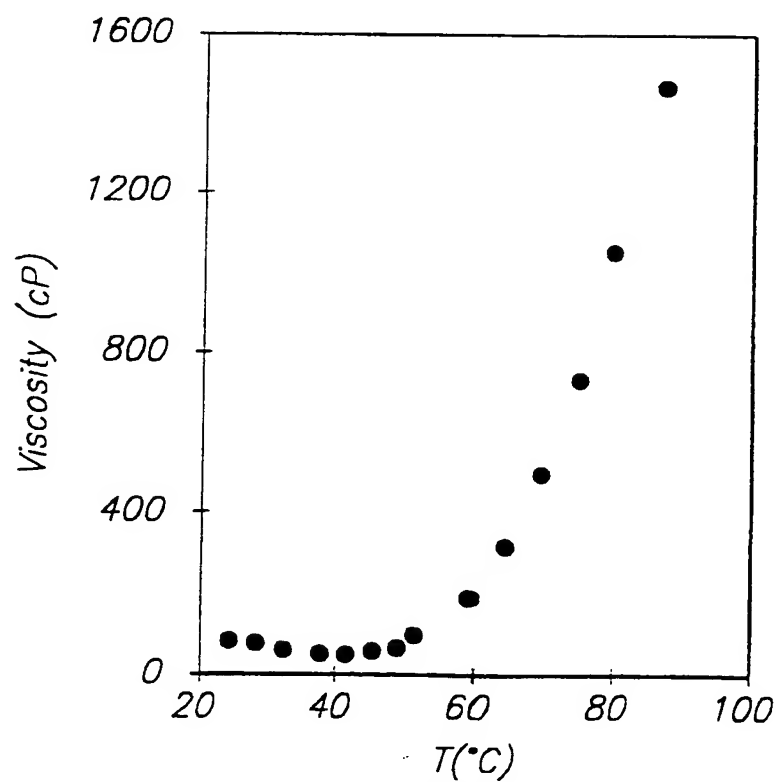
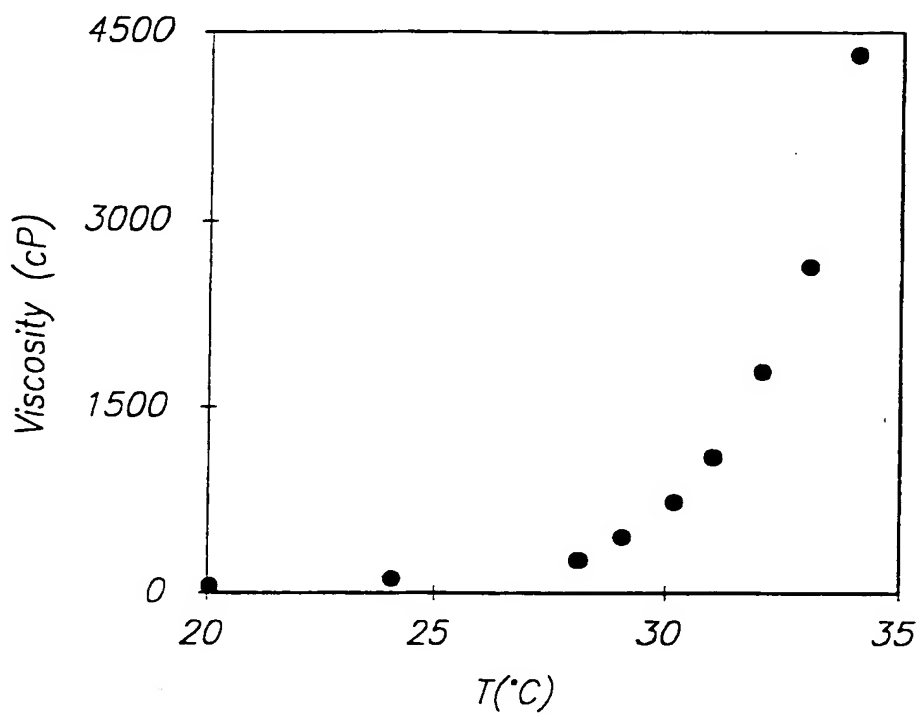
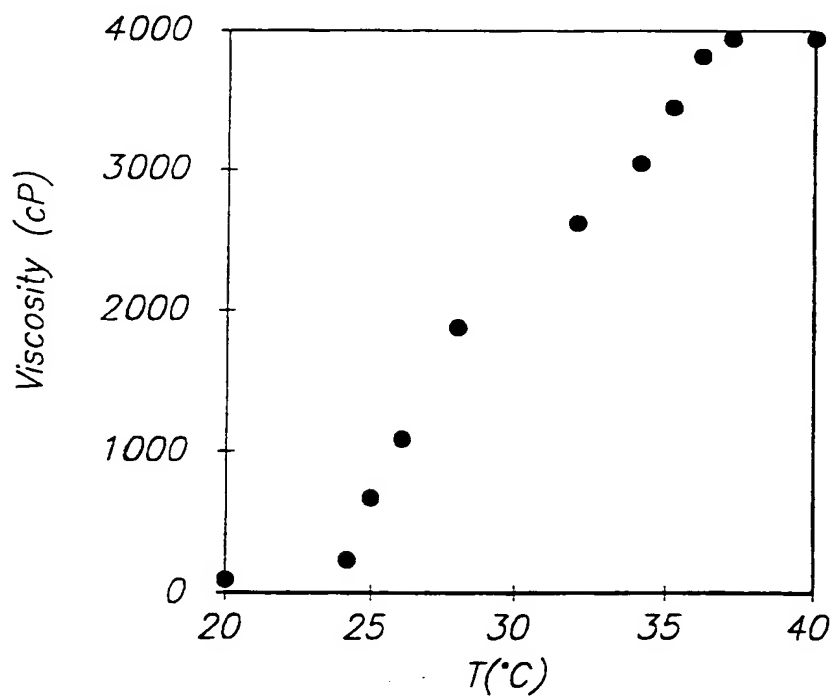


FIG. 13

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**FIG. 14****FIG. 15**

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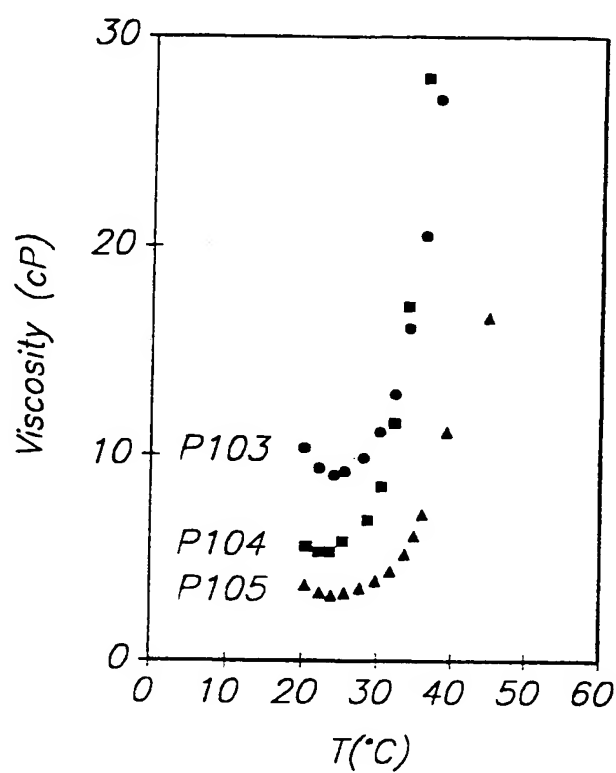


FIG. 16

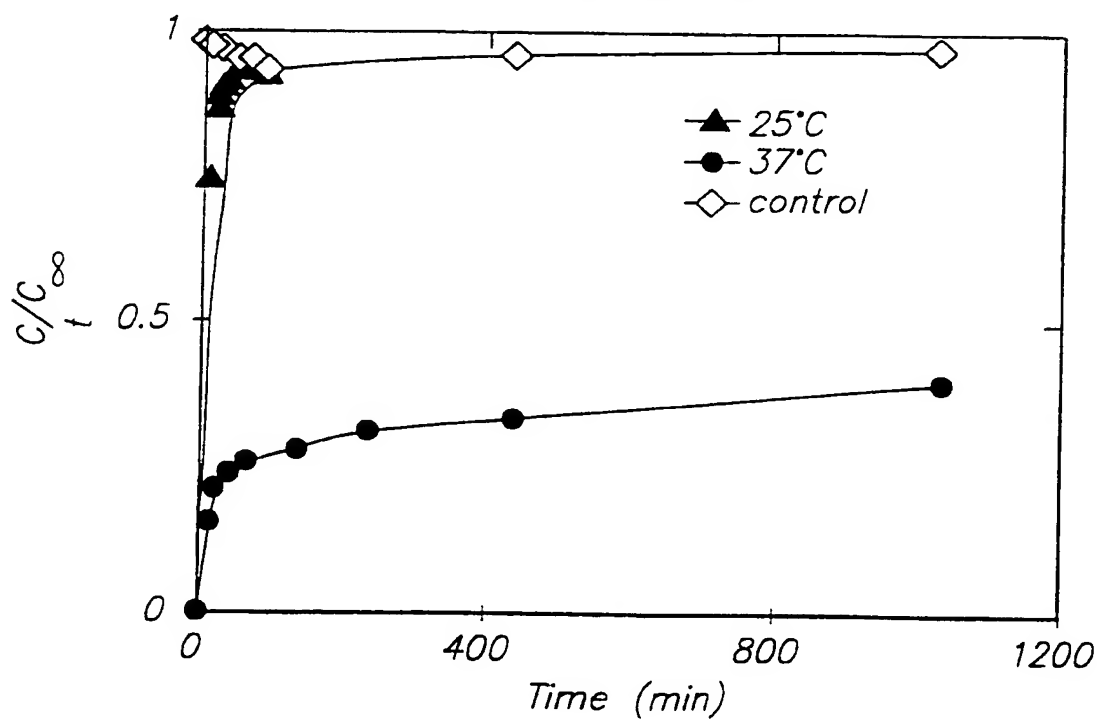


FIG. 17

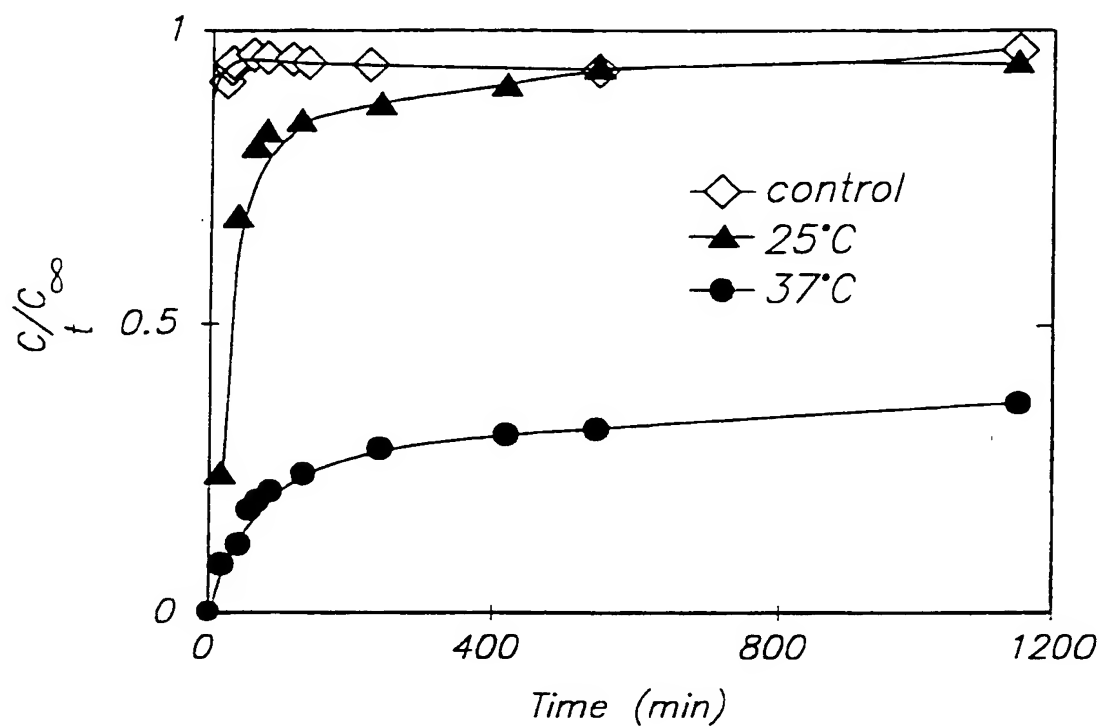


FIG. 18

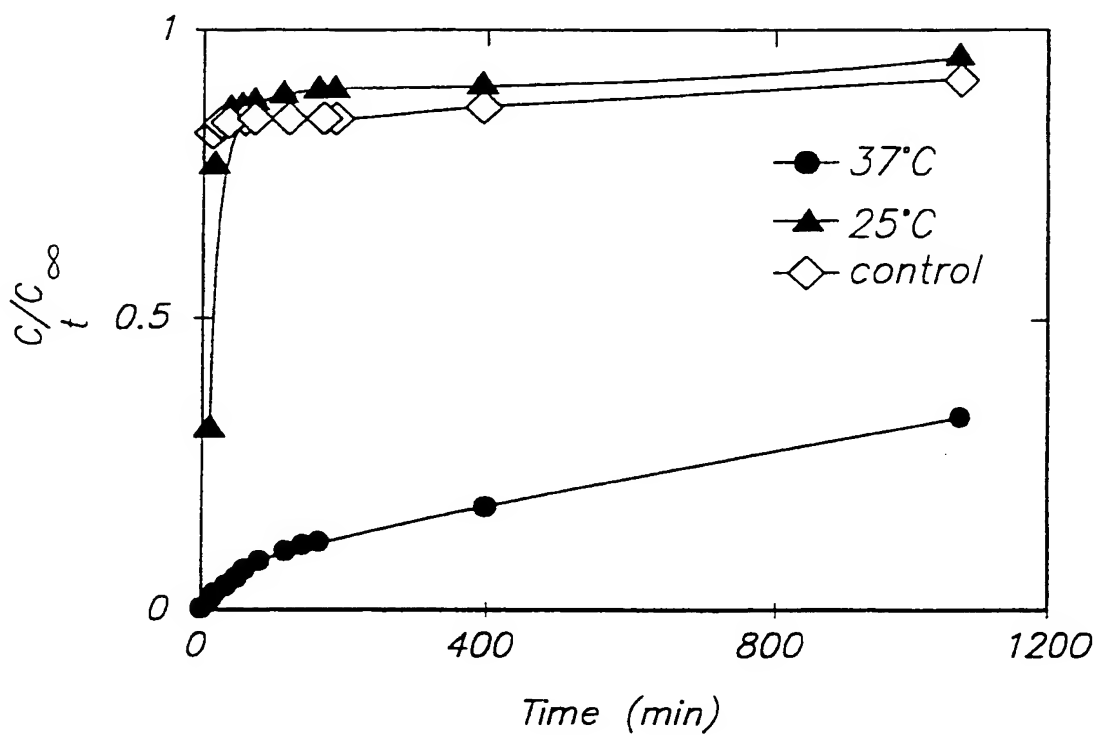


FIG. 19

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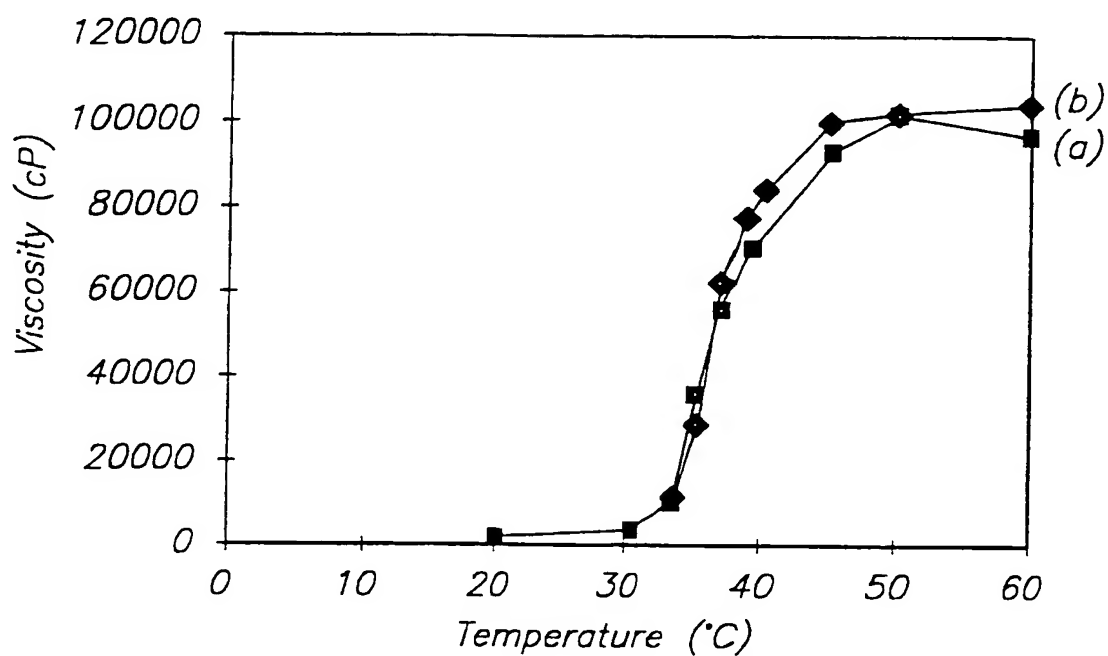


FIG. 20

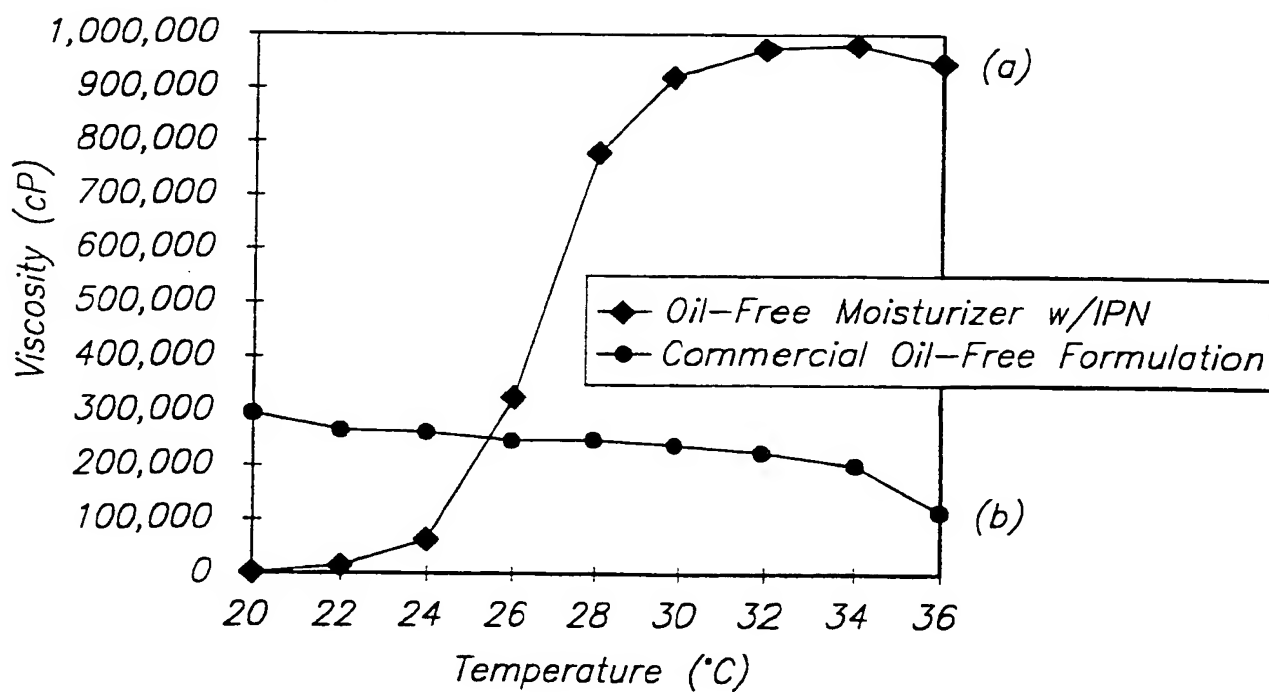


FIG. 21

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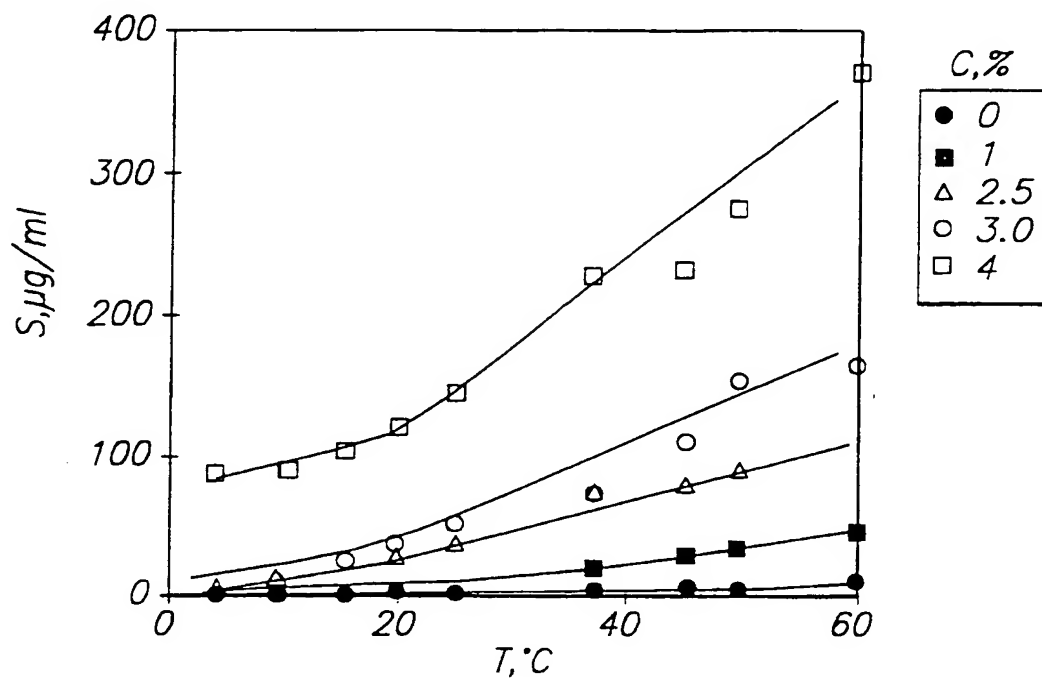


FIG. 22A

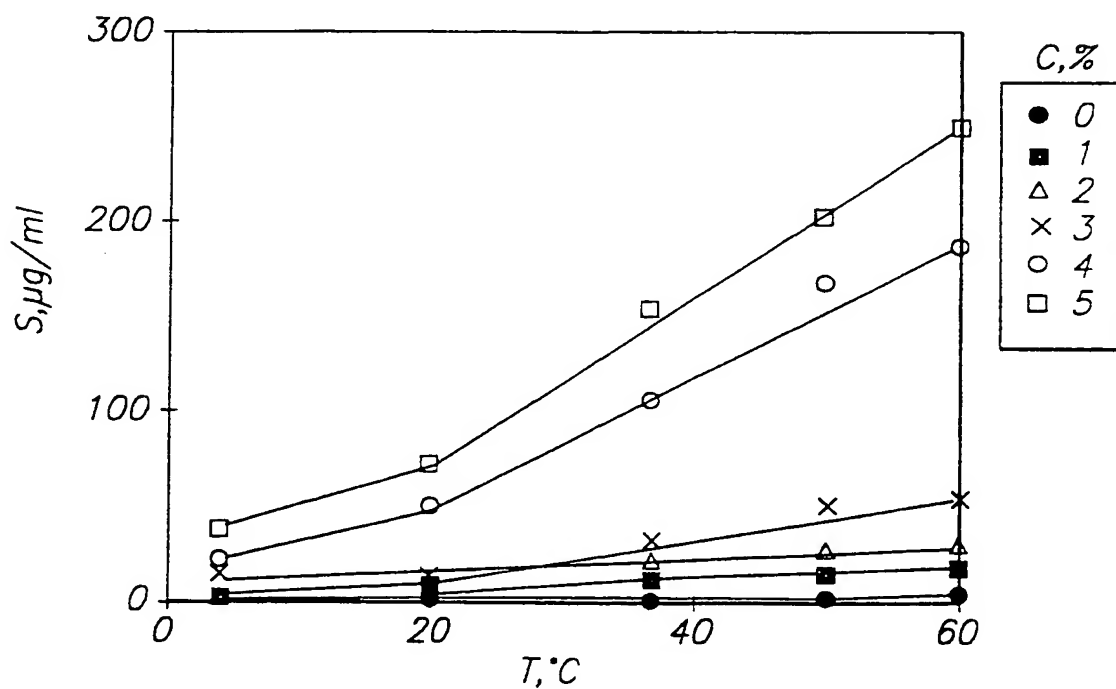


FIG. 22B

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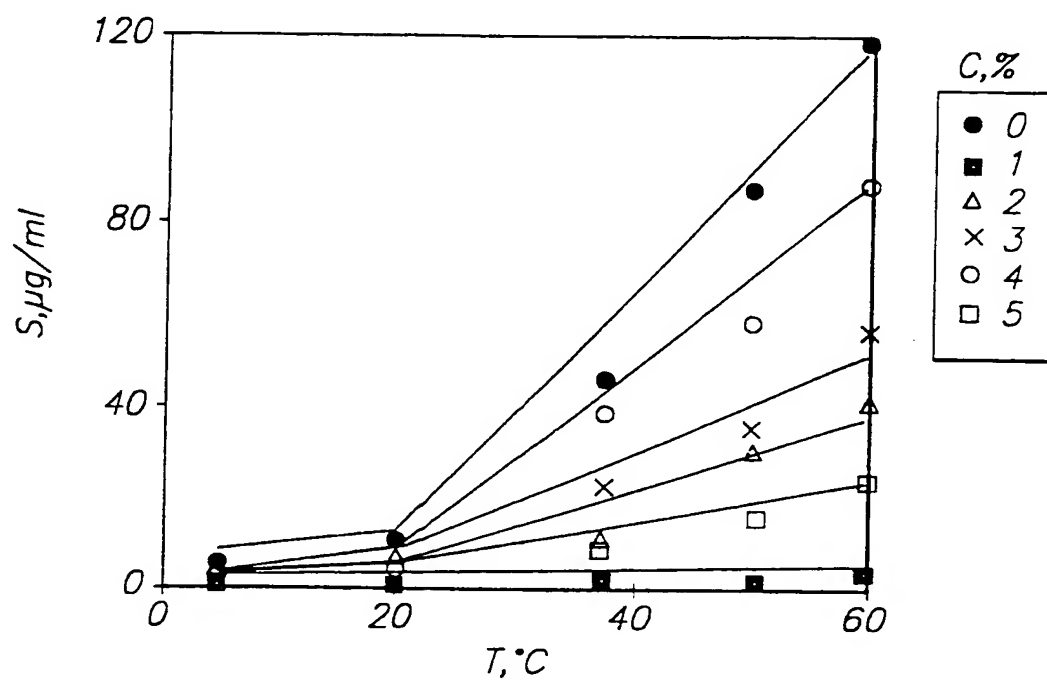


FIG. 22C

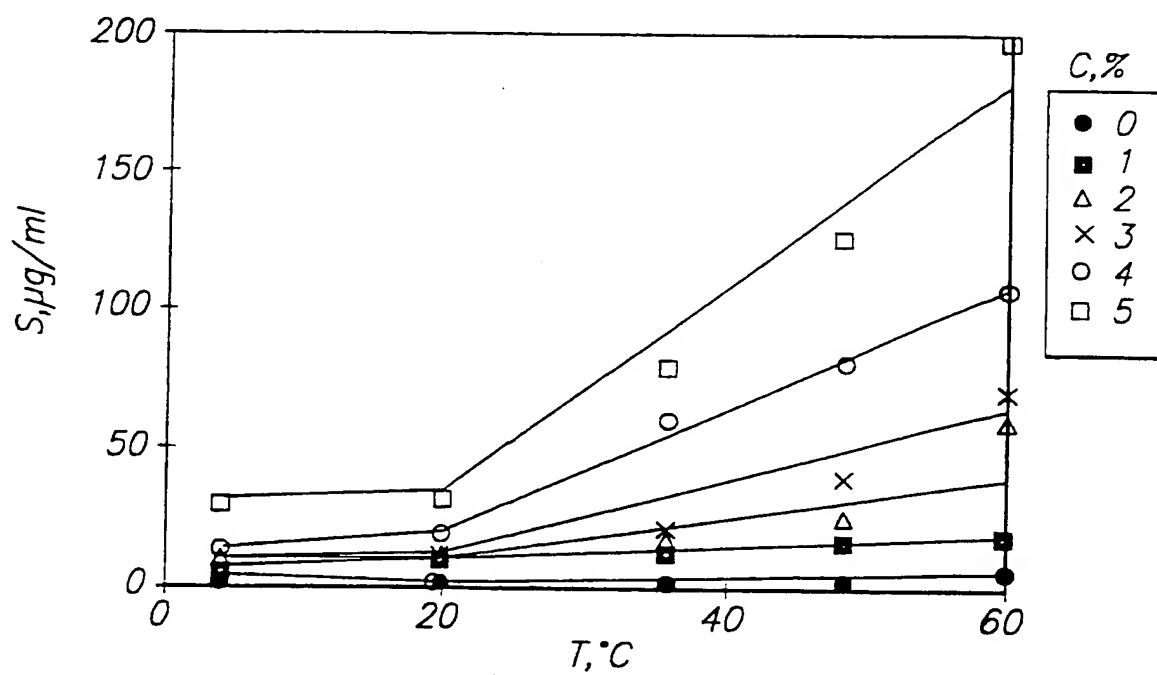


FIG. 22D

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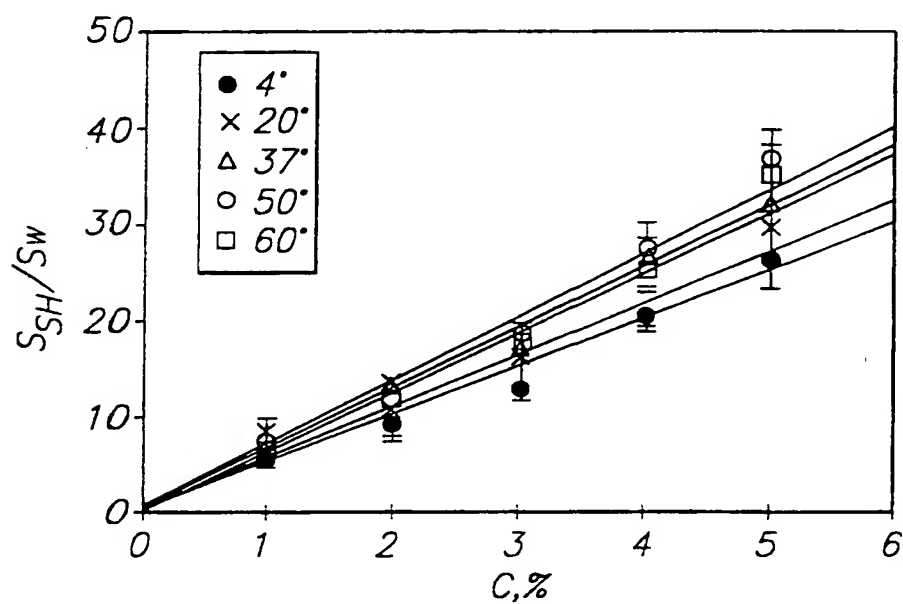


FIG. 23

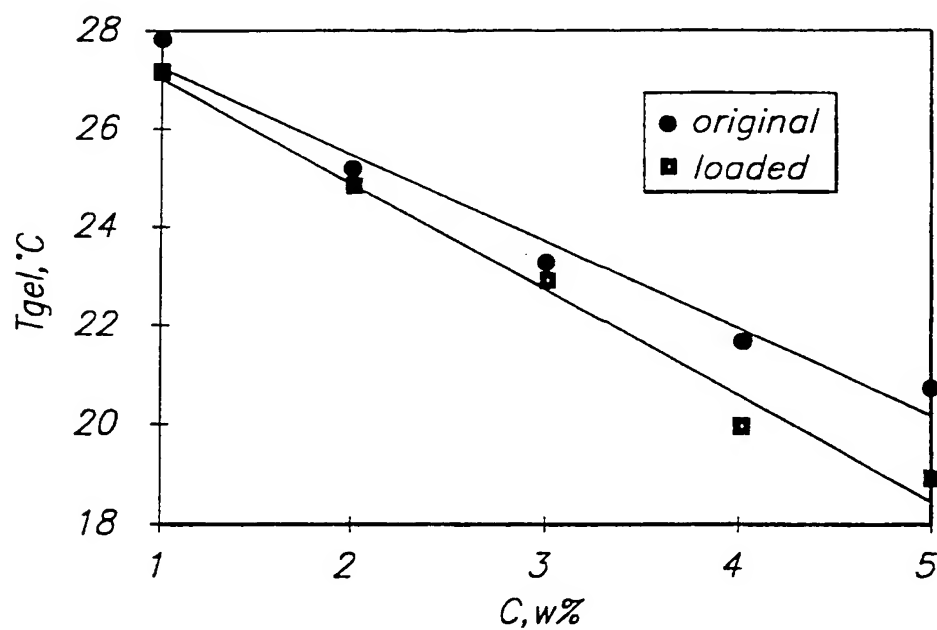


FIG. 24

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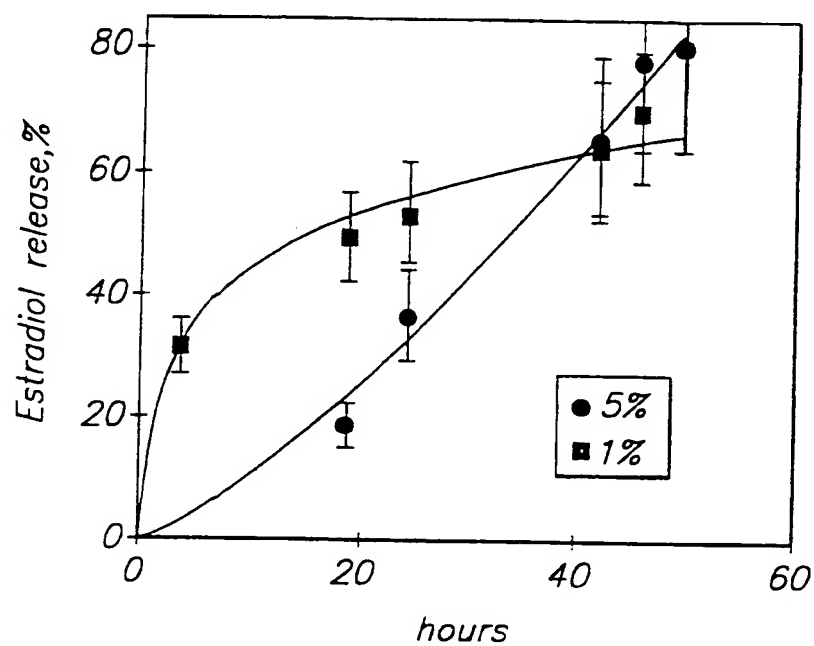


FIG. 25A

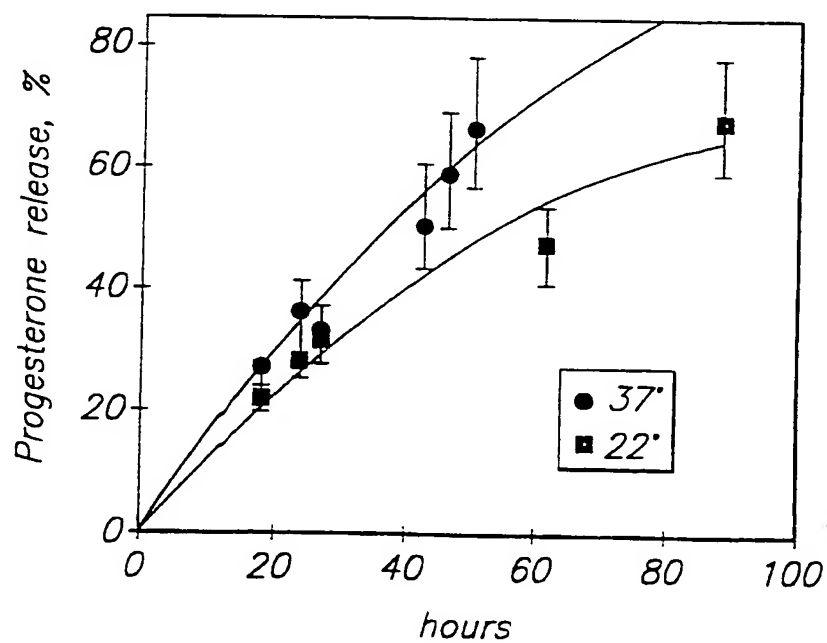


FIG. 25B

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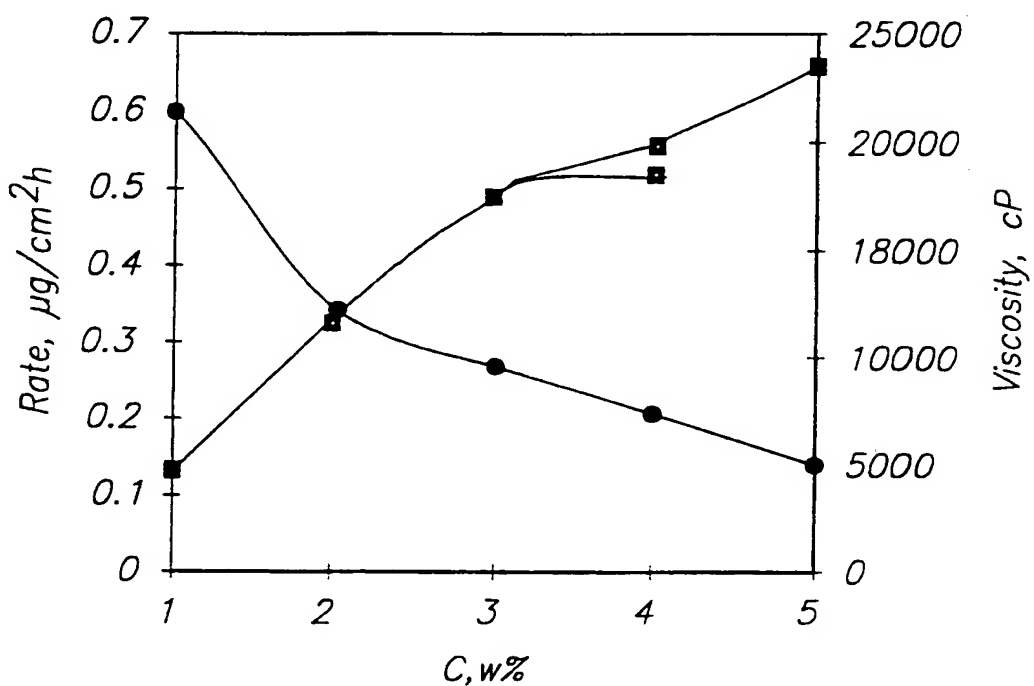


FIG. 26

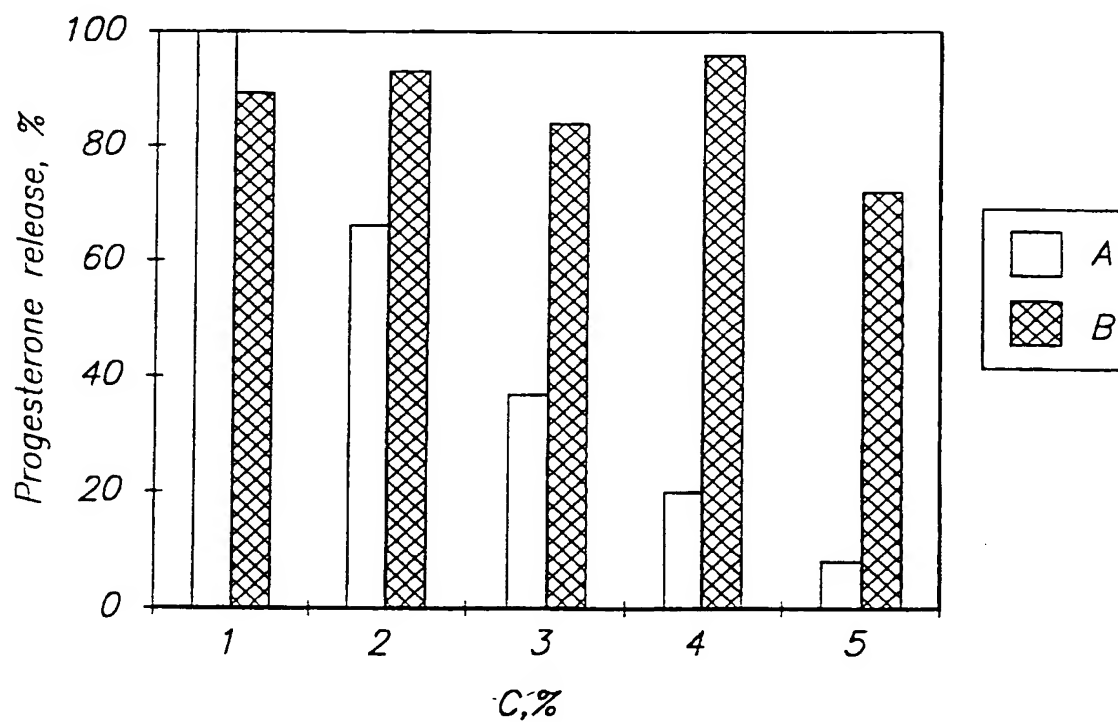
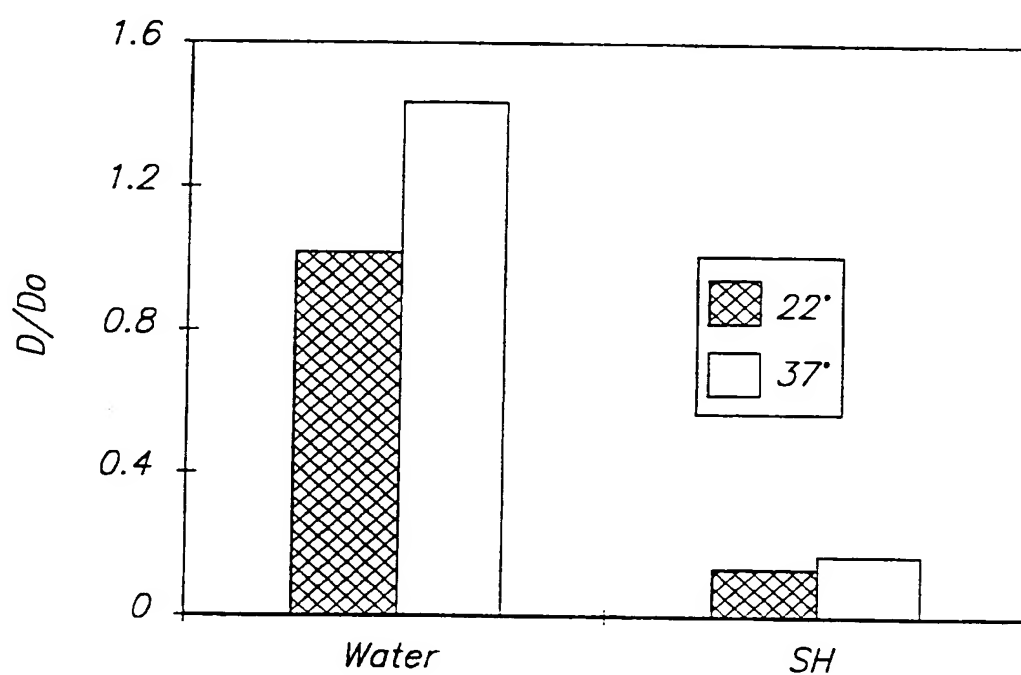


FIG. 27

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**FIG. 28**

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/08931

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) : A61K 7/00, 7/021, 7/06, 7/09, 7/16, 7/32, 7/42, 31/74

US CL : Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 424/49, 59, 63, 64, 65, 70.1, 70.2, 70.7, 78.02, 70.08, 400, 401, 405

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS: COSMETIC, POLYACRYLIC ACID, POLYMER NETWORK, POLOXAMER

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A, P	US 5,662,892 A (BOLICH, JR. et al.) 02 September 1997, see entire document.	1-38
Y	US 5,106,609 A (BOLICH, JR et al.) 21 April 1992, see entire document.	1-38

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document published on or after the international filing date

I document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

Z document member of the same patent family

Date of the actual completion of the international search

03 AUGUST 1998

Date of mailing of the international search report

02 OCT 1998

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/08931

A. CLASSIFICATION OF SUBJECT MATTER:

US CL : 424/49, 59, 63, 64, 65, 70.1, 70.2, 70.7, 78.02, 70.08, 400, 401, 405